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FRIDAY, JANUARY 1, 1892.

[PRICE TWOPENCE,

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

OUR VIEWS.—Summary of the Year: Photographs in Colours—Scientific Applications of Photography—Medical Photography—Astronomical Photography—Photogrammetry—Spectro-photography—Edison's Kinetograph—Transmission of Pictures by Electricity—Chronophotography—Silver Subhaloids—Optics—International Congress—The Convention—Camera Club Conference—Exhibitions—Societies—Art—Colour Sensitive Plates—Developers—Printing Processes—Lantern Slides—Photo-mechanical Work—Literature—Monthly Competitions—Monday Afternoons—Quarterly Examinations—AMATEUR PHOTOGRAPHER Eighth Competition Award.

LETTERS.—Camera Club "One Man" Exhibition (Geo. Davison)—An Experiment (G. F. Wynne).

ARTICLES.—Photographic Procedure (Wall)—Composition, Light, and Shade (H. P. Robinson)—The Lantern, and How to Use it (C. Goodwin Norton)—Beginner's Paper (Partridge).

REVIEWS.—"Amateur Kunst."

SOCIETIES' MEETINGS.—Bath—Blackheath—Devonport—Dorset—Glasgow and West of Scotland—Kendal—Lowestoft—North London—North Middlesex—Rochdale and District—S. Hornsey—S. London—Spenn Valley—West Surrey.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (*All Communications should reach the Editor on Tuesday.*)

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"Amateur Photographer" Monthly Competition No. 32.—"INLAND SCENERY, WITH OR WITHOUT FIGURE." Latest day, January 25th.—*Prizes:* Silver and Bronze Medals, with Ribbon and Clasps. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, February 12th.)

ACCORDING to ancient custom, we commence the new year with a brief retrospect of the old. If there has been no startling and striking novelty or discovery to record, there has been a substantial advance in all branches of photography.

One of the discoveries of the year, or at least, one which has caused more general notice than any other, is Professor Lippmann's application of the interference of light to the production of photographs in colours. It is advanced as an objection to this process that it is by no means applicable to the obtaining of photographs of ordinary subjects, such as landscapes, portraits, etc., but further researches with colour-sensitive plates may lead to still better results. Within this last month we have yet another announcement

of the production of photographs in colours by M. Baudran, of Versailles, the report of whose work has so recently appeared in our pages. Mr. F. E. Ives, of Philadelphia, U.S.A., has been continuing his researches in the same direction, and has been able to show lantern slides in natural colours by using three slides from negatives formed by three primary colours as enunciated by Young, Helmholtz, and other observers. Mr. A. W. Scott has been working on the same lines, and although his results have not yet been shown publicly, there is no doubt that the principle utilized by these experimentalists will receive more and more attention. Several firms, both English and Continental, have been applying this principle to the production of prints in colours, and we have seen proofs of work by an English firm which are of the highest excellence and correctness of colour and finish.

Photography receives each year increasing attention from the advanced scientists and investigators in allied sciences, and the past year is rich in applications of the science in recording experiments. Lord Rayleigh has utilised it for photographing jets and bursting soap bubbles. A photographic study of the electric arc has also been undertaken, which has been of great practical interest to electricians. It has also been adapted to the micro-sismograph for obtaining permanent records of the seismic movement of the earth. Increased attention has been paid to meteorological photography, and cloud photography has received a great impulse both here and on the Continent, superior results being attained by utilising the polarisation of light from a black mirror, commonly known as the Claude Lorraine glass.

Medical science has been increased in usefulness by the researches of photo-microscopists and the adaptation of photography to the particular study of the larynx. Justice has also pressed the action of light into her service, and some striking results in this particular department were exhibited by Dr. Jeserich at the exhibition of the Photographic Society of Great Britain.

Of the value of photography to astronomers a noble testimony was borne by Sir William Huggins in his opening speech as President of the British Association for the Advancement of Science. And the published results of Rowland, Vogel, Russell, Barnard, the brothers Henry, and others, all prove that in the future of astronomical science, photography will play no mean part. The colossal scheme for the preparation of a photographic chart of the sky has received the support of every nation, political and national differences have been sunk, and an amicable basis has been

arrived at, and the enormous value of this scheme to posterity we can hardly conceive.

Returning once more to mundane affairs, the science of photogrammetry, or surveying by the aid of photography, has received great support on the Continent, the number of works published on this subject being in proportion far beyond that of any other department. In England we are content to form surveys of local places more as histories and pictorial records valuable to our descendants, whereas our Continental neighbours have endeavoured to utilise our art to lighten the ordinary labours of surveying.

The fascinating pursuit of spectrum work has also engaged the attention of photographers, and some valuable results have been obtained both in terrestrial as well as celestial departments. Edison has completed his researches upon the Kinetograph, an instrument which is at once a phonograph and a camera, and by its means has been able to record both the gestures and speech of an orator, and reproduce them simultaneously to a large audience. Our latest advices from America announce the realisation of a plan long hoped for by idealists, viz., the transmission by the aid of electricity of an image or picture produced by the agency of light, about which we shall probably have more to say and hear presently.

Photography has been applied, too, by certain railway companies to the study of the internal condition of tunnel brickwork, magnesium or electric light being also used. A disastrous accident by the breaking of a bridge has also directed attention to bridges in general, and photography has again been found a useful servant.

The analysis of moving objects has also received increased attention, especially in France, and M. Marey has exhibited some wonderful results, which possess particular interest to photographers, and to artists as correcting many erroneous ideas hitherto prevalent. It would be, of course, impossible to neglect the work of Professor Muybridge on this subject, and he has been very generally received with applause and high commendation on the Continent, in the principal cities of which he has been lecturing. One application of photography which has taken place in America is decidedly novel, and that is the cycling fraternity offered money prizes of some considerable value for photographs of the state of bad roads, obviously the records being a very powerful weapon with which to beat the supine local authorities, a plan which might well be adopted in this country.

In the purely scientific province we have no particular advance to chronicle. Mr. Guntz has definitely decided the existence of the subhaloid salts of silver, which obviously has direct bearing upon the formation of the invisible image. Colonel Waterhouse has continued his researches on the reversal of the image by thio-carbanide and its compounds, and contributed some valuable results of his researches in electro-chemical reversion. Messrs. Hurter and Driffield have also continued their researches, and although their results have not been accepted without cavil, still they are, and must prove of great value to the pure scientist, as well as to the general photographer.

In the department of optics we have no great advances to note. Messrs. Dallmeyer, Miethe, and Steinheil have been considering the production of lenses which have for their purpose the production of large images of distant objects, and Mr. Dallmeyer has exhibited at the Camera Club his new tele-photographic lens, which gives with a focus of 13 in. an image five times the size of those obtained by an ordinary lens of the same focus. Increased attention has been paid to the optical glass emanating from the factory of Schott and Gen, at Jena, and special objectives of this glass

by Mr. Zeiss have been introduced commercially into England.

The past year has been signalised by the meeting of the International Congress of Photography, at Brussels, and by the attempt to determine certain international standards. The Photographic Convention has also contributed its mite in this respect, and it is to be hoped that we are somewhat nearer the ideal of a universal and international standard in all departments both scientific and practical.

The Camera Club has as heretofore held a conference which has been and is undoubtedly of value, if only for the interchange of ideas between photographers of all kinds and classes. Exhibitions we have had without stint, the most notable being the International of the Liverpool Society, and that of the club of Amateur Photographers of Vienna. This last was founded somewhat on the lines of the Salon of Paris and the Royal Academy exhibition, and it resulted in the collection of pictures from all countries, and we may congratulate ourselves that Englishmen and English-speaking photographers, both amateur and professional, were by no means the last, both as regards technical and artistic excellence.

Photographic societies have not been idle. New ones have sprung into existence with amazing rapidity, and some of the old ones are by no means behindhand in advancing the study and practice of our art and science. A federation of the societies was proposed, and some advance made, but we as well as all who have the well-being of photography at heart will not be content till a permanent Photographic Institute has been founded which shall take that position in the English photographic world which is now occupied in Continental circles by the K. K. Lohr und Versuchanstalt, of Vienna. The parent society, the Photographic Society of Great Britain, has unfortunately been torn by internal dissensions, and whatever may be our private opinions as to this matter, one and all must admit that the Photographic Society of Great Britain does not take up that position which it should do, considering that it is the *doyen* of photographic societies, and is supposed to enrol amongst its members the *creme de la creme* of the photographic world.

The excitement in photographic art circles has undoubtedly been the renunciation by Dr. P. H. Emerson of all his naturalistic principles, which unfortunately was accompanied by considerable acrimonious discussion with some of his adherents. But notwithstanding this renunciation, Dr. Emerson had made his mark, and his name will always be associated with that particular school usually and erroneously called the "naturalistic," the principal exponents of which are George Davison, Lyonel Clark, Maskell, and Horsley Hinton.

In the department of practical work, increased attention has been paid to the use of colour-sensitive plates; and the recent introduction, by a large firm of manufacturers, of such plates, at a somewhat lower price, must lead to their more general use, and thus to a more faithful reproduction of nature and natural objects. We have also received a hint that another firm will shortly place a colour-sensitive plate upon the market.

Several announcements have been made as to the discovery of rapid collodion emulsions, for instance, by Dr. E. Vogel, Wellington, and Gaedicke; but the greatest advance has certainly been made by Dr. Jonas, of Vienna, whose valuable monograph on the subject of making such emulsion, which possesses at the same time high colour sensitivity, we translated and published in our columns.

Notwithstanding the faithful adherence of old workers to "dirty pyro," increased attention has been paid to the

newer agents quinol and eikonogen, and the latter especially has received great recommendation from many practical workers, especially for bromide paper and lantern work. New formulæ without number have been given from all sides. Paramidophenol, the latest reducing agent, has, from the reports of experimentalists, some good features, and, from personal trials, we can at least promise it a fair share of notice. Doubtless in the future increased attention will be paid to the possibilities of discovering new developing agents amongst the many complex organic salts which now receive so much attention from chemists. The acid fixing bath has been on its trial and has fairly taken its place in the dark room of the practical worker, both for negative and positive work.

Printing processes show a distinct reaction, as the general desire is now for warm tones in place of the inevitable black and white of previous years; indeed, so far has this desire penetrated that bromide paper is now utilised for obtaining warm tones by a secondary development or treatment of the paper. Matt surfaces are still in great request, and we are pleased to note that tinted papers are now becoming things of the past. We have fought hard for the use of white paper, as being far more artistic and far more pleasing, and we hope that in the future still less of these tints will find favour. Permanence of image is now the feature demanded, and therefore such processes as platinotype, kallitype, carbon, and gelatino-chloride are slowly but surely ousting the old albumenised print. Mr. Willis, in a paper read in the early part of the year, before the Camera Club, describes the application of his process to the decoration of wood, cloth, etc. Gelatino-chloride papers, such as Obernetter's, Liesegang's, Jacoby's, and Celerotype, have been in great demand, particularly the matt surface kinds, judging from our competitions and exhibitions; and a heavy blow has been struck at albumenised paper by the introduction of the Ilford gelatino-chloride printing-out paper, at a price equalling ordinary albumenised. All of us will gladly welcome the introduction of any paper which enables us to obtain results superior in detail and delicacy combined with greater permanency.

Lantern-slides still continue great favourites, and, judging from those sent in to our competitions, a still higher standard of excellence exists in comparison to previous years.

In photo-mechanical work several processes for the easy production of collotype prints have been suggested, for instance, by Warnerke, Lavroff, and Balagny. Sutton has introduced a process for obtaining printing surfaces direct from negatives. Photo-mechanical processes generally are being used more and more for the technical and general newspaper, by the manufacturer and trader, for the illustration of his wares in price-lists and advertisements.

Of photographic literature, we have, as usual, plenty, and the leading works have been "Optical Projection" (Lewis Wright); "Ausführliches Handbuch der Photographie" (Eder); "Geschichte der Photographie" (Schiendl); "Lehrbuch der Photographie" (Vogel); "Jahrbuch der Photographie" (Eder); "Colour Measurement and Mixture" (Abney); "Lehrbuch der Mikrophotographie" (Neuhaus); "Materia Photographica" (Leaper). As usual our publishers, Messrs. Hazell, Watson, and Viney, Ltd., have by no means neglected this branch of their business, and have issued:—"Gelatino-Chloride Printing-out-Paper" (Woodbury); "One Hundred Formulæ" (Ingles Rogers); "Photographs of the Year" (Robinson and Hastings); "Holidays with the Camera" (Hastings); "Evening Work" (Hepworth); "Development" (Clark); "Art of Retouching" (Hubert); "Amateur Photographer's Annual," etc.

One of the most successful and most artistic publications ever issued to the photographic public has been "Photographs of the Year," which has received universal commendation both from the press and subscribers.

Of our work in the columns of our papers, it would not be seemly for us to say more than we have spared no efforts to make the same interesting and useful to our readers, aided as we have been by such a band of experts as H. P. Robinson, Valentine Blanchard, W. J. Harrison, Clement J. Leaper, Bothamley, Lambert, Maskell, Pringle, Perkins, Wall, Horsley Hinton, etc.

Our competitions have been well supported, and the quality of the work shows an increasing advance in competitions both in technique and artistic qualities, and we trust that the competitions arranged for this year will be equally well supported. The following is the complete list:—

- Jan. 25.—Monthly Photographic (Inland Scenery, with or without Figure).
- Feb. 22.—" " (Seapieces and River Scenery).
- Mar. 21.—" " (Portraiture and Figure Study).
- " 31.—Ladies' Third Annual Competition
- Apr. 25.—Monthly Photographic (Inland Scenery, with or without Figure).
- May 23.—" " (Seapieces and River Scenery).
- June 20.—" " (Portraiture and Figure Study).
- " 30.—Photography at Home Competition.
- July 25.—Monthly Photographic (Inland Scenery, with or without Figure).
- Aug. 22.—" " (Seapieces and River Scenery).
- Sept. 19.—" " (Portraiture and Figure Study).
- " 30.—Fifth Annual Lantern Slide Competition.
- Oct. 24.—Monthly Photographic (Inland Scenery, with or without Figure).
- Nov. 21.—" " (Seapieces and River Scenery).
- Dec. 19.—" " (Portraiture and Figure Study).
- " 31.—Holidays with the Camera Competition.

Of the literary matter we can only point to the past years to convince our readers that we shall in no way relax our efforts, and whilst catering for the advanced student we shall in no way neglect the less experienced hand. We have made arrangements to give increased attention to our Continental and American *conféres*, and shall be able to give our readers the latest news, the latest discoveries, and the newest processes, and, as in the past, we shall hope to keep well in the front in all departments.

Our "Monday Afternoons" have been so well attended that it has been at times difficult for us to satisfy all our visitors within the limits of our time. These will be continued, and we shall still be pleased to see all comers, and shall endeavour to satisfy both experts and tyros. Our "Monday Evenings," even though a great success, we have been unfortunately compelled to discontinue, but we hope to be able to make arrangements for a larger hall and a comprehensive programme.

We have, as already noted, decided to receive members of the trade, whether advertisers or not, when we may be consulted upon any question affecting the taking out of patents, inspection, and explanation of apparatus, prior to preparation of notices for the paper, and the Editors will be pleased to afford inventors opportunities to demonstrate their inventions, and to show the practical working of apparatus, etc., the morning for this reception being Thursday in each week.

Our "Quarterly Examinations in Photography" have received fairly general support, and we think that they will be found useful both by the competitors and our general readers. We have, therefore, decided to continue them, and the syllabus will be ready this week.

We have already exceeded the limits designed, and conclude our brief retrospect with "Hearty good wishes to all for 1892."

We have much pleasure in making the award in connection with the AMATEUR PHOTOGRAPHER Eighth Lantern Slide Competition, "Figure Studies and Humorous Pictures." Only seventeen competitors sent us slides. The prizes have been awarded in the following order:—

First Prize (Silver Medal).

JAMES WILLIAMSON Brighton.

This competitor's slides are by reduction; name of plate not given. The slides were developed with pyro and ammonia. No. 1, "The Blacksmith," is a fine study of a man at the anvil, with a good interior of the village smithy. The light falls well upon the figure, the pose is natural, and the technical work perfect. No. 2, "The Fisherman," a man standing on a jetty pointing out to sea, also proves Mr. Williamson to have much discriminating power in grouping his pictures.

Second Prize (Bronze Medal).

WM. RICE London.

Mr. Rice sends two slides which may both be classed as "Humorous." No. 1, "The Co-operative Movement," is a scene from the quarters of the Holborn Cycling Club at the Southern Counties Camp, Godalming, and depicts an amusing episode in camp life. No. 2, "Somebody's Darling:" in this picture we have a very small child asleep under an old umbrella on the top of a knife grinder's machine. The technical work is very perfect, and Mr. Rice has been at some pains to send in original subjects. His slides are by contact, on Thomas's plates, developed with hydroquinone.

Third Prize (Certificate).

GEO. F. FIRTH Wakefield.

The slides both tell their story exceedingly well. No. 1 shows a boy standing by the door, and he is saying "How kind that boy was to give me a sweet." No. 2 gives the sequel; the lad is not so happy, and cries out, "Oh, it's ginger!" These slides are by reduction, on Ilford Special plates, developed with hydroquinone.

The other slides are of exceptionally high quality. We rank them in the following order:—

CLASS I.	CLASS II.	Smith, Thos. E.
Taverner, W.	Ellsworth, W. S.	Crank, W. T.
Newland, Surg. A. G. E.	Wynne, G. F.	CLASS III.
Chamberlain, Joseph	Stringfield, Wm.	Dart, W. B.
Stieglitz, Alfred	Ellsworth, F. W.	Bradburn, S. J.
	Leatham, W. C.	Clarke, Thos.

The following is an analysis of plates used:—

Thomas	17	Collodion	3	Mawsen	2
Not named	4	Edwards	2	England	1
Ilford Special ..	3	Carbutt	2		



THE Illustrated Monthly Supplement to the AMATEUR PHOTOGRAPHER will not be issued until the 15th inst. Competition No. 31—"Seascapes and River Scenery"—will be the subject, and the Supplement will include reproductions of six of the photographs contributed.



Mr. Andrew H. Baird, 15, Lothian Street, Edinburgh, sends us a very useful and complete list of optical lanterns and accessories, and we note several novel and useful goods. Mr. Baird is now offering a new wall map-pattern screen mounted on roller and lath, one side of which is stout white cartridge paper, the other being black cloth, thus enabling one to use the screen for the usual lantern exhibition or for special experiments on light, etc. A very useful set too is the ground-glass cut to size, the special pencils to draw on the same, and a solution which renders the ground-glass quite transparent, thus facilitating considerably the production of plans and diagrams by lecturers on the spot. Yet another novel combined mask and binder which obviously lightens the labour of the lantern slide mounter.

Reviews.

Amateur Kunst: a portfolio containing thirty-seven photogravures.

By R. Paulussen (Vienna). Edition de luxe, Japanese paper, 60s., Chinese paper 40s.

We have already referred briefly to this beautiful work, in which certainly the very finest photogravure is to be found that has ever come under our notice. The portfolio is the outcome of the recent photographic exhibition held in Vienna under the auspices of the Club of Amateur Photographers. In the notice already given we referred mainly to the reproduction of photographs by English workers; we will now give a glance through the whole collection.

Taking them in the order of the list, we have first, "A Study in Venice," by H.I.H. the Archduchess Maria Theresa, who, it will be remembered, is a patroness and a strong supporter of the Club of Amateur Photographers in Vienna. In the reproduction a tint has been used in sky and water which, though possibly improving it as a picture, takes away from its interest as the reproduction of a photograph. The selection of point of view is well chosen. "Eccogia," by F. Boissonais, of Geneva, is a charming landscape in which the lighting is well chosen and points to art training; this picture is 9 by 11 in. The reproduction of Arthur Burchett's "Knight" is really a splendid piece of work, and here the reproduction has done something for the picture; the high lights in the original are a little hard, but in the plate before us they have been softened off with much advantage. Adam Distin's picture, "Relics," is given. In this we have an old lady examining with interest the contents of a sailor's chest. The picture is a testimony to Distin's skill in composition, and is relieved by the reproduction of some of the heavy shadows which too often, in our opinion, mar Distin's photographs. On one mount we have work by Mr. and Mrs. Clarke; the former is not so good as prints from the original negative which we have seen. Mrs. Clarke's picture is hard in the shadows.

John C. Douglas (Munich) has a pretty picture of a child in a fancy dress, who expresses much earnestness.

Charles Scolik (Vienna), an artist in every sense, contributes a portrait study, "Die Schöne Niederländerin," in which the Dutch serving maid is in the picturesque costume of the country: this is a fit companion for the picture by Douglas, and they are both on the same mount.

Anton Einsle (Vienna) has contributed a beautiful picture, "Am Gartenzaun," in which a timbered house with overhanging roof, surrounded with trees, and in the foreground two girls picking wild roses; the figures are well placed, and the whole a most pleasing composition. Carl Greger (London) has two of his photographs reproduced on one mount, "The Ebb-tide" and "Grand Junction Canal." There is no doubt that Mr. Greger will take a high place as a landscape photographer. Herr Paulussen has done ample justice to the pictures in his photogravures, Leon Keusters (Antwerp) has two landscape pictures reproduced, but they have no prominent point of interest.

The Countess Loredana da Porto Benin has one of her well-known flash-light photographs, "Religionsstunde" reproduced. The series was, it will be remembered, on exhibition at the Camera Club. Herr Paulussen has selected an admirable picture for reproduction. The padre is instructing some village choristers, who are much interested in his explanation of a map of Italy which hangs on the wall. The Countess's photographs created a sensation at the Liverpool Exhibition, and have been much admired by all who have had the good fortune to see them.

F. H. Worsley Benison's (Chepstow) photograph, "Brandung am Felsenriff," is a fine study of rocks and waves, printed in a greenish black. We cannot compliment L. Susanka (Vienna) upon his photograph, "Wehr im Bystrathal," in which we have a weir built of rough logs, over which just a sheet of water is falling; the picture is bad in composition and lacking in interest. The same worker is much better in the two other photographs, which Herr Paulussen has reproduced; the best is "Das Alte Binderhaus," but this is not improved by the introduction of a very artificial cloud in one corner of the picture. Dr. Julius Strakosch (Hohenhausen) has a most beautiful picture in "Viehweide," a herd of cattle drinking on the margin of a lake. The cattle in this photograph are all sharp to the eye and the distance; trees have been hazed off; this gives depth to the picture and prominence to the cattle; it is as fine a photograph as any in the collection, and to the artist would be most valuable.

Another splendid picture is "Die Bärentreiber," a group of natives, and three performing bears; neither the bears nor their masters appear to be conscious of the camera. Carl Srna (Vienna) has a beautiful picture in "Verlassen," a girl lying at the foot of a praying cross; the composition is unfortunately spoilt by a staff or rod which lies across the foreground, and at once attracts attention, and is unnecessary to the composition. Chas. Scolik has "Der Alte Politiker," reproduced, a splendid portrait study, posed and lighted with the greatest care. G. Schultz's (St. Petersburg) "Winterlandschaft" lacks crispness in the snow, and the featheriness of the rime on the trees. Lyd. Sawyer's "Waiting for the Steamboat" is too well known to need a word; it is admirably reproduced. Prince Rufo (Rome) first showed his beautiful photographs at Vienna, but they are now well known in England, having been exhibited at most of the recent exhibitions. A "portrait study" is reproduced, a very fine profile most faithfully rendered in photogravure. Baron N. Rothschild's (Vienna) "Der Durrensee mit dem Monte Cristallo" is a lovely picture of lake and mountain scenery, the flat expanse of water broken in upon by a small rowing boat just enough to give life to the calm, still water. A very delightful portrait study, girl with water jug on her shoulders, by K. K. Lehr und Versuchsanstalt für Photographie und Reproduktionsverfahren (Vienna): this picture is perfect in pose and lighting, and the portrait of a really lovely girl. The school of photography that is responsible for the photograph is, we understand, presided over by the very talented and well-known Dr. Eder. We hope the day will come when such work may be turned out in this country, but we must admit to never having seen anything to come near the splendid photogravures now before us. Moritz Nähr (Vienna). This picture, "Waldinneres," is a photograph of a glen much such as we have in Scotland by the score. The foreground might, in our opinion, have been more pronounced. Alexis Mazourine (Moscow) has two photographs reproduced in one mount, "Die Wäscherin" and "Im Winter;" neither picture has any special point of interest. Ralph W. Robinson's photograph, "Sweet Springtime," is well reproduced in a warm sepia. It is known by many of our readers, and the plate before us is a very faithful copy of the original. Baron A. Rothschild (Vienna) has two of his photographs reproduced, which are most charming—"Waidhofner Ninetta." The pose in both pictures is graceful and natural, the dress picturesque, and "Ninetta" a bright and happy-looking girl. Baron Alfred Liebig (Vienna), a past competitor in the AMATEUR PHOTOGRAPHER Competitions, proves by the picture before us, "Am Alten Canal," that he has advanced into the first grade of workers. The selection is good, the lighting carefully considered, the whole resulting in an admirable landscape picture. Baron N. Rothschild's (Vienna) "Kinderjause" is a well-conceived picture, but the figures are scattered and forced; they are too evidently doing what they are told, and that with anything but an easy grace. The circular grouping on one side of the picture, if it were not for the consciousness of the figures, would be distinctly good; the other figures in the picture serve no good purpose. Ernest Spencer's (New Southgate) "Our Village" has been seen in this country, and is an exceedingly well composed picture. Mr. Spencer is one of the coming men, and will "be on the line" at many an exhibition if he follows up the good work he has already done. Paul Lange's (Liverpool) photograph "Rauh frost" has been reproduced with the greatest care, and in the photogravure the beauty of rime and snow is well maintained, the soft haze in the distance is perfectly true, and the whole picture rendered with great truthfulness.

As a tail-piece, Herr Paulussen has utilised A. R. Dresser's most charming wave study, "Corbiere Rocks."

The letterpress to this portfolio is contributed, so far as the art side goes, by Dr. Ritter von Falke, Director of the Austrian Museum of Art and Industry; the technical criticism being by Dr. Eder, who is well known in this country as a great authority upon all matters relating to the technique of photography.

Of the book itself it is really impossible to speak too highly. Whether those interested in photography will pay 40s. for such a book remains to be seen. We can truly say that nothing approaching the beauty of Herr Paulussen's photogravures has been done in this country, and we most heartily hope that he will have a large sale of "Amateur Kunst," and we are quite certain that every purchaser will be as charmed with the pictures as we have been ourselves.

Letters to the Editor.

CAMERA CLUB "ONE-MAN" EXHIBITION.

SIR,—Will you kindly allow me to state that the eighth of the series of "One-Man" Photographic Exhibitions will be open at the Camera Club on and after Tuesday, January 5th. The pictures will be by Mr. J. Pattison Gibson, of Hexham, by whom we shall be favoured with a representative collection of his photographs. Visitors will be admitted from 10 to 4 by tickets, which can be obtained from the Hon. Sec. of the Club and from members. The exhibition will remain open about six weeks—I am, dear sir, yours faithfully,

G. DAVISON (Hon. Sec.)
Camera Club, Charing Cross Road, W.C.,
December 24th, 1891.

* * * *

AN EXPERIMENT.

SIR,—As I have benefited on numerous occasions from the experience of brother amateurs, conveyed through the medium of your paper, I send you particulars of a satisfactory experiment I tried with my safety jet a few days ago.

I have used on many occasions Scott's warm-air benzoline saturator, and although it gives a splendid light, still its use entails a nervous fear that it may pop off at any moment (as it has occasionally done) and alarm the audience. Having a gas bag of about five feet capacity, I filled it with air from a pair of bellows and then passed the air through the warm gasoline saturator, when it burned at the hydrogen burner just like ordinary gas, and after turning on the oxygen jet a light was produced quite equal to that produced by coal gas. I tried the jet in every way I could to produce a pop, but failed, and I am convinced it is quite as safe as when worked with hydrogen gas.

The safety jet in question is one of Archer's improved, in which the oxygen nipple has a very small aperture and is sunk about $\frac{3}{8}$ of an inch below the level of the hydrogen tube. The jet is very economical, burning only about 1'34 ft. of oxygen gas per hour.

My method of testing this may be new to some of your readers. I have a weight made which exactly balances my 20 ft. cylinder, which I found when full contained 28 oz. of oxygen. After using the light for two and three-quarter hours, I again weighed it and found it was just 5 oz. lighter. Now as one cubic foot of oxygen weighs 1'36 oz., it follows that 3'68 ft. of gas were burned in two and three-quarter hours, which equals 1'34 c. ft. per hour. I consider this method of weighing gives a far more accurate result than can be obtained by the use of gauges, which are always liable to get out of order and is quite correct to a quarter of a foot; and besides this it costs nothing.—Yours, etc.,

G. F. WYNNE.

NOTE.—The saturating of air with gasoline or benzoline vapour is by no means a new idea, and has been utilised both for the manufacture of illuminating gas for household as well as for special purposes. We shall be pleased to hear any comments, however, from our readers.—ED: AM: PHOT:



The Photomnibus.—Under the above comprehensive name Mr. A. R. Wormald, Sutton, Surrey, has introduced quite a novelty in the shape of a pinhole camera with dry plates, developer, and fixing salt all for 2s 6d. From the specimens sent and from actual trial we can recommend this to any of our readers anxious to try this particular branch of photography.

Sell's "Dictionary of the World's Press."—Considerable sympathy must be felt, at any rate amongst business men, with Mr. Henry Sell, in his unavailing attempt to get the Post Office to allow him to complete from their list his "Directory of Telegraphic Addresses," which he says only contains half the number of addresses registered at the Post Office. To Mr. Sell belongs the credit of suggesting such a directory, and he was able to get no less than 20,000 such abbreviated addresses by canvassing and circulars. This he did not feel satisfied with, and so applied to the Post Office to allow him to take the other 20,000 names direct from their manuscript register, but this they declined to do. The new Postmaster-General has also taken up the same position as his predecessor, and now Mr. Sell has determined to agitate in the matter in Parliament, the more so that the Post Office will not publish a list itself. We wish him every success. We notice that the jury of the Exposition Internationale de la Publicité, 1891, Palais des Beaux-Arts, Paris, has awarded Mr. Henry Sell the highest award, viz., the Gold Medal, for his "Dictionary of the World's Press" and other publications relating to advertising.

Photographic Procedure.

By E. J. WALL,

Author of the "Dictionary of Photography."

SECTION III.

EXPOSURE TABLES, PHOTOMETERS, ACTINOMETERS, Etc.

Optical Photometers.—Under this heading we include instruments which are used to estimate optically the exposure required for any given subject, and as they differ slightly in use, we give a note on each, with the remark that it is utterly absurd, as we have already pointed out, to try to estimate the photographic intensity of the light by optical brightness.

Decoudun's Photometer.—This instrument, which is seen in figs. 95 and 96, consists practically of sheets of tissue paper in increasing thickness, and it was introduced commercially in 1888. The method of using this instrument is as follows:—The instrument is held with the right hand on the ground-glass of the camera, whilst the focusing cloth must be carefully wrapped round the operator's head, so as to exclude any light but that passing through the ground-glass. The operator



FIG. 95.

now observes from the distance of normal vision the small aperture to the left of the photometer (fig. 95), where three small holes and one large one are seen. The milled head in the centre of the instrument is now turned till the three small holes are no longer visible, and the instrument is then removed, turned over, and a letter will be observed, H, in fig. 96, which gives an index of the exposure required, as against the letter H in the table of the instrument will be found the exposure, 4 min. 5 sec.



FIG. 96.

Weber (Phot. Mittheil., vol. xxv., p. 37) has pointed out that this instrument possesses a scale of brightness of 9.48 to 0.35, to which the exposure is theoretically inversely proportional—that is to say, the times of exposure should be from 1 to 27—whilst Decoudun gives his scale of exposures from 1 to 750, which is quite sufficient to condemn it. Goerz, of Berlin-Schöneberg, has introduced an improved and simplified form, which, however, is also open to the same theoretical objections.

Tylar and Pickard's Exposure Meter.—This consists of a metal tube, the interior of which is provided with holes and increasing thicknesses of a translucent material which are brought before the holes by means of an external pointer, which indicates the exposure on a tablet affixed to the outside. This is open to the same objection as the last instrument, but differs from it in that it is directed to the subject, and not to the screen.

NOTE.—These articles commenced in Vol. xiv., No. 352, July 3rd, 1891.

Phosphorescent Photometers.—There are only two such instruments on the market, so far as I am aware, both of which depend upon the exciting of phosphorescent paint, and the power of the paint to retain and throw out again the light impressions.

Warnerke's Phosphorescent Photometer.—The principle of this is the excitation of a patch of luminous paint by the light falling upon the subject for one second, and then the estimation of the brightness of the luminous paint by means of translucent screens of increasing thickness.

Ballard's Actinometer.—This depends for its action on the power of luminous paint to retain and throw out again the light impressions it has received, and it consists of a square tube of wood, having at one end a hinged cover, with, on the inside, a prepared surface and a spot in the centre. The method of using is to open the cover, and look through the tube directly at the object to be photographed for half a minute, then closing the tube, a central blue spot will be seen, which will gradually disappear. The number of seconds which it takes to do this forms the basis of the calculation of a series of tables which accompany the actinometer.

The fault of these instruments, which depend upon phosphorescent paint, is that the personal equation of the individual eye comes into play, and that according to Wiedeman (Eder's "Jahrbuch," 1891, p. 588), if Balmain's luminous paint be exposed for one second, the brightness of the light emitted from that paint is not constant, as shown by the following table:—

After the lapse of 4 sec., brightness =	27.8
" " 20	" = 7.6
" " 40	" = 4.2
" " 63	" = 3.1
" " 90	" = 1.9
" " 180	" = 1.0
" " 240	" = 1.0

and the shorter the exposure the greater the sudden drop, and there is no constant ratio.

Exposure Tables.—We now come to these much maligned aids to exposure. As far as lies in my power, I give a sample of each, with the remark that there are, of course, other factors to be taken into account which obviously I do not include.

Wheeler's Exposures for August.

Ordinary Views with buildings in foreground in Diffused Light on 30 times or Ordinary Plates.

Focal Value of Stop.	MORNING.					MID-DAY.					AFTERNOON.				
	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7
f/5.6	—	3	3	3	3	3	3	3	3	3	3	3	3	3	—
f/8	—	1 1/2	3	3	3	3	3	3	3	3	3	3	3	3	—
f/10	—	2 1/4	1	3	3	3	3	3	3	3	3	3	1	2 1/4	—
f/11.3	—	3	1 1/2	1	3	3	3	3	3	3	3	3	1	1 1/2	3
f/16	—	6	3	2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	2	3	6	—
f/20	—	9	4 1/2	3	2 1/4	2	2	2	2	2	2 1/2	3	4 1/2	9	—
f/22.5	—	12	6	4	3	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	3	4	6	12	—
f/32	—	24	12	8	6	5	5	5	5	5	6	8	12	24	—
f/40	—	38	19	12	10	8	8	8	8	8	10	12	19	38	—
f/45.7	—	48	24	18	12	10	10	10	10	10	12	18	24	48	—
f/64	—	96	48	32	24	20	20	20	20	20	24	32	48	96	—
f/80	—	150	75	50	38	32	32	32	32	32	38	50	75	150	—
f/90.1	—	192	96	64	48	40	40	40	40	40	48	64	96	192	—

Mr. W. K. Burton's Table of Comparative Exposures.

Apertures calculated on the Standard System of the Photographic Society.	Sea and Sky.	Open Landscape.	Landscape with heavy foliage in foreground.	Under Trees, up to	Fairly Lighted Interiors.	Badly Lighted Interiors, up to	Portraits in bright diffused Light out of doors.	Portraits in good Studio Light.	Portraits in Ordinary Room.
No. 1, or $\frac{f}{4}$	$\frac{1}{100}$ sec.	$\frac{1}{50}$ sec.	$\frac{1}{25}$ sec.	min. 0 sec. 10	min. 0 sec. 10	hr. 0 min. 2	$\frac{1}{2}$ sec.	min. 0 sec. 1	min. 0 sec. 4
No. 2, or $\frac{f}{5.657}$	$\frac{1}{80}$ sec.	$\frac{1}{40}$ sec.	$\frac{1}{20}$ sec.	0 20	0 20	0 4	$\frac{1}{3}$ sec.	0 2	0 8
No. 4, or $\frac{f}{8}$	$\frac{1}{60}$ sec.	$\frac{1}{30}$ sec.	$\frac{1}{15}$ sec.	0 40	0 40	0 8	$\frac{2}{3}$ sec.	0 4	0 16
No. 8, or $\frac{f}{11.314}$	$\frac{1}{40}$ sec.	$\frac{1}{20}$ sec.	1 sec.	1 20	1 20	0 16	$1\frac{1}{3}$ sec.	0 8	0 32
No. 16, or $\frac{f}{16}$	$\frac{1}{30}$ sec.	$\frac{1}{15}$ sec.	2 sec.	2 40	2 40	0 32	$2\frac{2}{3}$ sec.	0 16	1 4
No. 32, or $\frac{f}{22.621}$	$\frac{1}{20}$ sec.	$\frac{1}{10}$ sec.	4 sec.	5 20	5 20	1 4	$5\frac{1}{3}$ sec.	0 32	2 8
No. 64, or $\frac{f}{32}$	$\frac{1}{15}$ sec.	$\frac{1}{8}$ sec.	8 sec.	10 40	10 40	2 8	$10\frac{2}{3}$ sec.	1 4	4 16
No. 128, or $\frac{f}{45.255}$	$\frac{1}{10}$ sec.	$\frac{1}{6}$ sec.	16 sec.	21 20	21 20	4 16	21 sec.	2 8	8 32
No. 256, or $\frac{f}{64}$	$\frac{1}{8}$ sec.	$\frac{1}{4}$ sec.	32 sec.	42 40	42 40	8 32	42 sec.	4 16	17 4

The Practical Index of Photographic Exposure.

By A. R. WORMALD.

JUNE.									
Stops.				Sun shining. 30 Times Plates. Average Exposure in Seconds at					
U.S. Nos.	Unit $\frac{1}{4}$	Unit $\frac{1}{10}$	Relative rapidity.	Ratio or Focal Value.	IV	Morn'g. V	VI	VII	VIII
				Evening. VII					
				IX					
				X					
				XI					
				XII					
1	...	16	$\frac{F}{4}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
2	...	32	$\frac{F}{5.3}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
4	...	64	$\frac{F}{8}$	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
...	1	100	$\frac{F}{10}$	$1\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
8	...	128	$\frac{F}{11.3}$	2	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
...	2	200	$\frac{F}{14}$	$3\frac{1}{2}$	$1\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
16	...	256	$\frac{F}{16}$	$4\frac{1}{2}$	$1\frac{1}{2}$	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
...	4	400	$\frac{F}{20}$	$6\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{1}{2}$	1	$\frac{1}{2}$	$\frac{1}{2}$
32	...	512	$\frac{F}{22.3}$	$8\frac{1}{2}$	$3\frac{1}{2}$	$1\frac{1}{2}$	1	$\frac{1}{2}$	$\frac{1}{2}$
...	8	800	$\frac{F}{28}$	13	$5\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{1}{2}$	1	$\frac{1}{2}$
64	...	1024	$\frac{F}{32}$	$16\frac{1}{2}$	7	$3\frac{1}{2}$	$2\frac{1}{2}$	2	$1\frac{1}{2}$
...	16	1600	$\frac{F}{40}$	26	$10\frac{1}{2}$	$5\frac{1}{2}$	$4\frac{1}{2}$	$3\frac{1}{2}$	$2\frac{1}{2}$
128	...	2048	$\frac{F}{44.3}$	33	14	7	$5\frac{1}{2}$	4	3
...	32	3200	$\frac{F}{57}$	51	21	$10\frac{1}{2}$	$8\frac{1}{2}$	$6\frac{1}{2}$	$4\frac{1}{2}$
256	...	4096	$\frac{F}{64}$	66	28	14	11	8	6

Platt's Tables.

TABLE I.—SUBJECT AND LIGHT.

Compiled and slightly altered from Eder's and Burton's Tables.	Sun-shine.	Diffused Light.	Dull.	Very Dull.	Gloom
Sea and Sky.....	$\frac{1}{2}$				
Panoramic View.....	1	2	3	4	5
Do. with Thick Foliage, or strong Foreground, or light buildings	2	4	6	8	10
Dark Buildings	3	6	9	12	15
Heavy Foliage Foreground	4	8	12	16	20
Woods and badly-lit River Banks	10	20	30	40	50
Living objects outdoors.....	4	8	12	20	30
Portrait near window	8	16	24	40	60
Interiors .....upwards of	100	12	20		
Copying same size	6				

TABLE II.—TIME (DR. J. A. SCOTT).

Hour of Day.		June.	May.	April.	March.	Feb.	Jan.	Dec.
a.m.	p.m.	July.	Aug.	Sep.	Oct.	Nov.		
12		1	1	$1\frac{1}{2}$	$1\frac{1}{2}$	2	$3\frac{1}{2}$	4
11	1	1	1	$1\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}$	4	5
10	2	1	1	$1\frac{1}{2}$	$1\frac{1}{2}$	3	5	6
9	3	1	$1\frac{1}{2}$	$1\frac{1}{2}$	2	4	12	16
8	4	$1\frac{1}{2}$	$1\frac{1}{2}$	2	3	10		
7	5	2	$2\frac{1}{2}$	3	6			
6	6	$2\frac{1}{2}$	3	6				
5	7	5	6					
4	8	12						

Yellow Sunset
affects these figures.

Composition, and Light and Shade.

Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.

By H. P. ROBINSON.

CHAPTER XXI.

(Figs. 50, 51.) When a picture is chiefly composed of light and half tint, the darks of the figures must necessarily tell with great force, from there being so little of half shade to rob them of their value; the mid-day sun, filling with intense light every particle of the atmosphere, gives that luminous appearance which is so strongly characteristic of an out-of-door effect; the dark local colours of the figures, from the absorption of the rays, retain undiminished power, and give that firmness and vivacity to the scene which prevents it from looking feeble. In nature, figures, from their upright position, have a greater consequence from the flat shadows being weakened by the light of the sky falling



FIG. 50.—VANDEVELDE.

into them; for, seeing that the whole heavens are filled with light, it is showered down and reflected in all directions. Also, from their being in motion, they attract the eye; a circumstance to be noticed by the artist, who has to give them their relative value on canvass, as they possess in reality. The consideration of all these circumstances influences many painters, in giving the darks the full force of the palette. As a general character, and the leading features of strong daylight are to be purchased at any sacrifice, critics who do not sufficiently investigate these matters may complain of want of air, but the student, by a close attention to the subject, will not easily be scared by the cry of *sans vapeur*.

Birds in the air, boats on the water, figures on the sands, cornfields, or light roads, have all this characteristic feature in a high degree, from the middle tint being on so light a key.

Cuyp often accomplishes this by the general tone of the picture being warm, and his shadows brownish, thereby allowing his blue draperies and cool blacks to have greater point. P. Veronese and Rubens have many pictures on the same principle.

Opposition of colour is of great importance in the

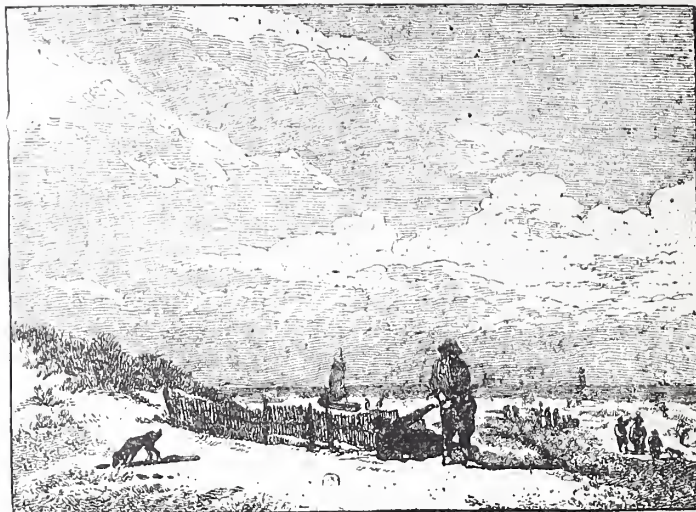


FIG. 51.—VANDEVELDE.

treatment of pictures on a light key, as it gives great relief and distinctness without cutting up the breadth of light; such as blue upon a warm ground, or red upon a cool one, bright yellow upon a cool grey, etc. In fig. 52 Claude has made great use of such opposition. The general appearance of the picture is warm, the dark blue of the water is carried across the piece by the dark blue draperies of some of the figures, and is suffused upon the upper part of the sky. The red is interspersed upon the boats and the draperies of the other figures; and, warming the near part of the buildings, is repeated at the top by a figure looking over the balcony and two red flags upon the blue of the sky. He has placed two blue flags upon the warm part of the sky to repeat the cool colour.

Pictures painted on a dark key have already been noticed as possessing many advantages, which have led our greatest colourists to its adoption. But as low-toned pictures are apt to look heavy and black, unless richness of shadows, or sharpness of lights be preserved; so pictures painted on a light key are apt to look flat and unfinished, unless the greatest circumspection be used. In nature, the intense light of the sky, and the atmosphere, which is filled with its innumerable refractions, spread a luminous character over the whole scene; to represent which the artist can employ only a greater degree of whiteness, a very inadequate quality,

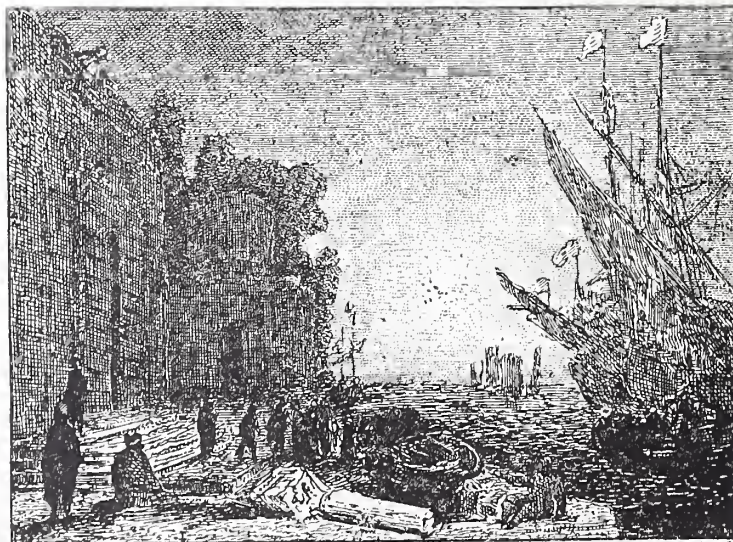


FIG. 52.—CLAUDE.

and hence the great difficulty of imitating the splendid brightness of mid-day, or the brilliant effects of an evening sky. In treating the one, unless the delicate varieties of the half lights are attended to with the greatest care, the picture will look crude and unfinished; for the tints being so nearly allied to each other, the exact sharpness to define them, and their exact tone, either by repeated scumbling, or mixing them to the proper tint in the first instance,

In addition to the "Three Trees" of Rembrandt given in the last chapter, figs. 50, 51, and 54 are examples of what is often done in painting and seldom in photography, pictures in which a large portion of the space is occupied by the sky, with a narrow strip of landscape to support it. It is not necessary in these arrangements that the land should be subordinated or made of no importance. On the contrary, occupying a small space only importance should be given to the forms and incidents, to afford the proper amount of balance. In neither of these illustrations does the land fill more than a quarter of the whole space, yet there is nothing "to let." Of course, the sky must be an effective one, good in form and mass. No means of art gives the various moods and phases of the sky with the fidelity of photography, yet good use is seldom made of this most changeable and beautiful part of nature.

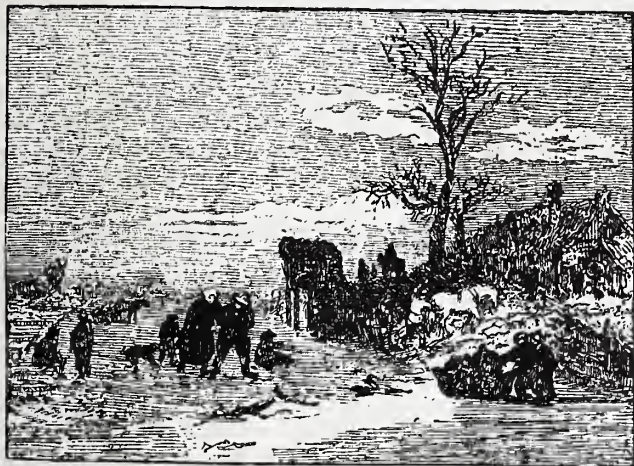


FIG. 53.—OSTADE.

require an attention and study of the most refined quality; without which the shadows will be powdery instead of pearly, or the lights white instead of luminous. In the other arrangement the yellow tones may become solid and foxy, if deprived of the delicate cool tints so necessary to prevent their appearing too hot, and to give the whole that tremulous, unsteady appearance which light possesses in nature.

Light pictures, from the tenderness of their light and shade, require the colours opposed to each other, whether



FIG. 54.—CUYP.

blue opposed to red, or yellow to cool grey, to be managed with the greatest delicacy; otherwise their strength will destroy all appearance of light and air. In light pictures strong colours can stand only as middle tint, or for leading the light into the shade, but can appear as lights only by being relieved by strong shadow. We often find them, as in P. Veronese, etc., standing as darks, or made use of to give objects an appearance of solidity, without breaking up the general mass of light in the picture.

The Lantern, and How to Use It.

By C. GOODWIN NORTON.

CHAPTER V.

To Use the Spirit Jet.—Articles required are spirit jet best methylated spirit, wick, rubber tube, soft limes, and supply of oxygen from bag or cylinder. To fill the spirit cistern, turn the whole jet upside down and withdraw the outer chamber, fill the inner chamber with spirit and replace the outer one, then turn the jet back again to its normal position; attach the jet to tray, and put a lime on its pin. Adjust the wick in such a way that the oxygen will blow through the flame and not against any part of the wick. If a bag is to be used for the oxygen, secure it between the boards and connect the rubber tube. For an 8 ft. bag put on 56 lbs.

When using a cylinder without regulator connect the rubber tube, open the tap of jet fully, and leave it so. All adjustments are afterwards made from the valve of cylinder, which should be opened very slowly. Be careful not to tread on the rubber tubing, or it will have the same effect as closing the tap of jet. If an automatic regulator be employed, connect it to the cylinder; before attaching the rubber tubing open the valve very slowly with its key; as soon as the gas is heard escaping, close the aperture with a finger and listen; if the joint is leaking, tighten it up by tapping the wing of connector, or by the wrench should a leather washer be used.

It is a good plan to blow off a little gas before attaching regulator, in order to get rid of any foreign matter which might have found its way into the mouth of the cylinder. This done, close the valve and connect the regulator to jet. Be careful that the valve of cylinder is not turned on again without first emptying the bellows of regulator, either by turning on the tap at jet or disconnecting the rubber tube.

Light the spirit and revolve the lime round a few times to thoroughly warm it. Now turn on a little oxygen very slowly, and revolve the lime again down as far as it will go. The oxygen should then be turned up as high as it will bear without becoming noisy, and the lime adjusted to its proper distance from the nipple. This must be determined by the intensity of the light. In a short time the heat will cause the flame to become larger and give more light. Care must be taken that the lantern does not become overheated. To lessen the flame the wicks can be pressed back into the tubes with a long pin. It is essential that the spirit chamber be kept quite cool. Any danger of overheating may be obviated by placing a wet cloth over it, or have a felt cap cover made to fit and slightly damped.

The wicks should be looked to at intervals, to see that the spirit is not coming out too fast, also to see that there is no leak in the chamber or tube. Spirit being very thin, will

get through a small hole quickly. The flame giving little or no light, serious damage may be done without the operator perceiving it. As the lime wears away, turn it round, but if it crack and be in danger of falling off the pin, take the first opportunity to change it. A good lime will generally last an hour or more. When the bag is about half empty put on a little more weight, but if the light is maintained leave well alone.

Safety or Blow-through Jets.—The hydrogen or coal gas is supplied to the jet by connecting it to the nearest gas bracket by rubber tube. To do this in a strange place is sometimes a matter of difficulty and is the chief drawback to the use of this jet.

Sometimes the nearest supply is a star burner controlled by one tap. To stop the burners not required, use short pieces of rubber tube, one piece to two burners; if there are two burners left, use both by attaching a Y or T piece. In some cases the whole of the gas in a hall is turned up or down with one tap; this is awkward, but the difficulty may be generally overcome by getting a supply from the entrance hall or corridor.

If the supply has to be carried some distance through the audience to the lantern, a few lengths of quarter inch iron gas piping will be found useful.

Metal tubing is now made which is practically as flexible as rubber, and it can be trodden upon with impunity. The smallest size, $\frac{1}{8}$ inch internal diameter, will bend sufficiently to describe a circle of 6 in. across and is ample for three jets at the normal pressure. It is the same price as good rubber tubing, to which it can easily be joined.

Composition lead pipe used by gas fitters is very cheap and serviceable if protected from rough usage. Should the supply pipe be larger than $\frac{3}{8}$ inch outside, a diminishing socket will be required; it is well to have three or four of these known amongst gas fitters as $\frac{1}{8}$ to $\frac{1}{4}$, $\frac{1}{8}$ to $\frac{3}{8}$, $\frac{1}{8}$ to $\frac{1}{2}$, $\frac{1}{8}$ to $\frac{5}{8}$, and nipples for same should the pipe terminate with an internal screw, also a couple of $\frac{1}{8}$ straight sockets; these will generally screw on in place of the ring that holds the globe. It is also well to have two $\frac{1}{8}$ T pieces, three or four $\frac{1}{8}$ nose pieces straight and bent, a pair of gas tongs, a few gas burners, a piece of soap, some sharp-pointed nails, also pieces of $\frac{3}{8}$ brass tubing two inches long to join rubber tubing together, and a ball of twine.

This seems a long list, but the items are inexpensive, take up little room, and save the operator a deal of trouble and anxiety when exhibiting in a place the gas arrangements of which he has no previous knowledge of.

If possible the burner should be removed and a nose piece fitted in its place with one of the above sockets. When replacing gas fittings put a little soap on the screws. Should the gas from one burner be insufficient use two connected together with a T piece and rubber tubing.

The management of the blow-through is similar to that of the spirit jet, except that the flame of the hydrogen can be regulated more easily than the flame from the spirit. The two gases must be carefully adjusted to each other to get the best light with a minimum of heat and noise. If the pressure of oxygen is too great, a black spot will form in the centre of the lime just where it ought to be brightest. If the pressure cannot be lessened, try if the light can be improved by moving the lime a little farther from the nipple. This distance cannot be fixed, so much depending on the pressure of gas; it is usually about half an inch with the blow-through jet.

If the supply of oxygen come from a bag, the weight may be slightly increased towards the finish; but if a cylinder and regulator be used, the light ought not to require re-adjusting. When a non-automatic regulator is employed, or the gas comes direct from the cylinder, the valve should

be opened a little more every fifteen minutes or so, very cautiously, or there will be a noise, the light will drop considerably, and perhaps go out altogether.

The Mixed, High-pressure or Chamber Jet, with Bags.—Before filling the hydrogen bag be quite sure that it has not been used for oxygen, and *vice versa*.

It is a good plan to put a quantity of house gas into the hydrogen bag, and then to expel it into the open air, away from a light. This will dilute any common air left in the folds of the bag and render it harmless; but in emptying the bag be careful that the tap is closed before pressure is released, or the elasticity of the bag will suck in air again. Connect the hydrogen bag to a gas bracket, and turn on both taps. When quite full make it a rule always to turn off the tap of bracket before that of the jet. If this be forgotten, the apartment may become full of gas. Someone will then kindly assist in finding the leak with a lighted match, and——

Be careful to get all this done in good time; it often takes an hour or more to fill a 10-foot bag.

Place the bags in the pressure boards and secure them as previously directed. One hundredweight will be generally found sufficient for 12 feet of hydrogen and 10 feet of oxygen. If more light be required, $1\frac{1}{2}$ cwt. may be used.

Make the necessary connections, hydrogen on the left, oxygen on the right. Put a hard lime on its pin, close the taps of the jet, and open both taps at the bags fully. Turn on the hydrogen very slowly, and light up. Revolve the lime in the flame to warm it, then turn down the hydrogen a little, and slowly open the oxygen tap, allowing plenty of time for the air in the tube to blow out, until the flame of the hydrogen has almost disappeared. Turn on more hydrogen, and then the oxygen, until the jet makes a little humming noise with a slight corona of yellow flame round the lime. With the mixed jet the lime is usually placed close to the nipple, but a considerable gain in the power of the light can often be attained by careful adjustment. Sharp cracks are sometimes heard when lighting up a mixed jet. These are caused by insufficient pressure on the bags, or from the oxygen being turned on too quickly.

The taps of the jet require a little re-adjusting soon after the exhibition has started. Usually it is the oxygen, or top bag, which has to be turned down a little. With cylinders and good regulators the operator is spared this trouble.

Do not try to use the two bags right out, or one of them may be quite released from the necessary pressure. When finishing, turn off at jet oxygen first, then hydrogen, and allow as long a time as possible to elapse, not less than five minutes, before touching the bags or shifting the weights.

Empty both bags, close the taps, and put on padlocks. It is better to waste a little gas than to run the risk of getting gas into the wrong bag.

It is imperative that hydrogen be not kept in the bag more than four hours at most, lest by a process known as endosmose common air may find its way through the rubber in quantity sufficient to form an explosive mixture.

The Etho-Oxygen Light.—This is a difficult subject to deal with. Some operators use it and declare it to be quite safe. Others have tried it, had accidents, more or less serious, and discarded it; again, there are those who would not use it under any circumstances. The light is practically the same as produced by oxy-hydrogen and mixed jet. The difference is that, instead of using hydrogen or coal-gas, the stream of oxygen coming from a bag or cylinder is divided, part of it going direct to the oxygen side of jet, the other passing through a vessel containing ether; the oxygen takes up a certain amount of ether vapour, and when they both arrive together at the jet will burn some-

thing like hydrogen. The pure oxygen is then mixed with this in the chamber of the jet.

The *Ether Vessel*, called a saturator or vapouriser, consists of two brass tubes, lying side by side and connected together at one end by a smaller bent brass tube. The reverse ends of the two tubes are fitted with brass caps, having nozzles to receive rubber tubing. The saturator is stuffed with two rolls of flannel to absorb the ether, and has spiral springs inside to keep open a passage for the oxygen. The light is equal to the oxy-hydrogen with mixed jet: the saturator is portable: there is only one bag or bottle to be used, and many dealers say in their catalogues that it is quite safe to use provided the proper precautions are taken. But it is a fact that accidents have happened after all these precautions have been taken. Safety with this light depends not only upon keeping the pressure on the bag or, with a cylinder, constant, but in keeping the quantities of the vapour of the ether and the oxygen in such proportions that the mixture will burn instead of exploding. To be "safe," the ether vapour must be considerably in excess of the oxygen, but the difficulty is to keep it so. The lanternist who may have been recommended to use this light should consider this. The saturator may, from some reason, such as the opening of a door, be suddenly cooled, the ether will cease to give off the proper degree of vapour; an explosive mixture may thus be formed in the tubes of the hydrogen side of the jet which may take fire, and if nothing else happens, blow off the tubes, and put out the light; this would be a very serious matter in a crowded hall.

The ether light is useful for work out of doors, or for advertising, or even in a class-room where there are only a few persons who would not be much frightened by the tubes being suddenly blown off. But where there are children or where any accident could happen from the light going suddenly out, this apparatus, as at present constructed, can scarcely be recommended. Safety pumice tubes are advocated for using with this light, which is a tacit admission that it is not quite safe.

With Scott's Warm Air Saturator there is an appliance for keeping the vessel warm by means of a night light or two. This causes the ether to vapourise more readily, and lessens the risk of getting an explosive mixture, but it is an open question whether it is conducive to safety to place a light in close proximity to vessels containing gases more or less inflammable.

It cannot be too widely known that when once an explosive mixture of gases is fired, no form of safety valve or chamber will confine the explosion. It has been known to find its way through or round a brass cut-off tap.

Pumice chambers will after a time become so saturated with the ether or coal-gas as to be in themselves a source of danger.

There is one way of using ether with advantage and safety. If hydrogen coming from a cylinder be passed through an ether saturator it will take up two or three times its bulk of the vapour; thus 5 ft. of hydrogen in this way will generally suffice for 12 ft. of oxygen at a temperature of 60 deg. This effects a great saving, compressed hydrogen costing about four times as much as the vapour of ether, and may be considered safe, as explosion is practically impossible without oxygen. In all cases very light ether should be used. White's methylated ether 717 is perhaps the best.

A few hints: Beginners, as a rule, use too much oxygen; this cools the lime and lessens the light. Too much hydrogen imparts a yellow tinge to the disc and heats the lantern. A good hiss at the jets is a sign of safety, but very objectionable to those sitting near the lantern. Limes often crack if insufficiently warmed before the oxygen is turned on.

Always keep a spare lime or two and lime-tongs in one particular place, in or near the lantern. When working with cylinders, leave the keys on the valves while in actual use, or if this is impracticable keep them in the pocket. If the limes have been forgotten, do not despair; send to the nearest builder's yard for some rough pieces of lime, saw and scrape them as near round as you can, and bore the hole with a penknife, or perhaps the builder himself will shape them with his tools.

There is a story to the effect that a well-known exhibitor finding himself without limes, requisitioned all the tobacco pipes in the neighbourhood, and managed to get some sort of a light by placing one of the bowls on the lime pin and replacing it as often as necessary.

Should the taps of the bags or jets work stiffly, take out the plug and lubricate with a little vaseline. Do not put oil or any gritty matter on the valve of cylinder or on any part of the gauge or regulator, nor on the gasbag or rubber tubing; oil or grease will dissolve rubber. If a gas bag is suspected to be unsound, never under any circumstances attempt to find the leak with a light; it is possible to extinguish a small flame coming from a leak in the hydrogen bag, but with the oxygen bag the case is hopeless.

To discover a leak in a bag inflate it fully and immerse in water, or, as this is not often practicable, well soap the suspected part, but be careful to wash the soap off afterwards. Gas bags are easily repaired with rubber solution and rubber cloth. Cut the cloth to proper size, spread the solution over it, also over the part to be covered, let both get sufficiently dry to be tacky, then press them both together with as much force as may be available; the greater the pressure the stronger the joint.

In view of the extra trouble and anxiety connected with the use of the mixed jet by those who only occasionally give an exhibition, the blow-through form is undoubtedly the most suitable for amateurs: with it a fifteen feet picture can be projected at a distance of forty feet from the lantern, and what more can be wanted?

With a professional operator the case is different; he can take all necessary precaution, because he usually has little else to think about, and the apparatus is entirely under his own control. No "accident" can happen with the safety jet, except through some defect in the apparatus.



Beginner's Paper.

By F. PARTRIDGE.

FOLLOWING the precedent set in a recent number of the AMATEUR PHOTOGRAPHER, I will try to give a little help to those who may be struggling with difficulties which I have now learned to overcome. For I, too, am a beginner—I know where the shoe has pinched, and I will take care not to pretend to more knowledge and experience than I possess.

First, as to development. I use pyro and soda and potash, and am careful to develop until the plate is black all over. The little book which was my first instructor omitted to tell me this, and, in consequence, I popped the plate into the fixing bath as soon as the picture was out and looked pretty, with the result, of course, of getting only a ghostly negative. I spoiled all my first efforts that way, even those that I now see might have been good ones. I generally use five drops of 10 per cent. bromide, unless I am certain that there cannot possibly be over-exposure. It makes things safer, and if development is too slow, I add a few drops of caustic soda—100 gr. to 2½ oz. water (I am speaking of half-plates).

Not being yet able to varnish in the usual way, I protect my negatives with encaustic paste. This is most essential, especially in winter, for in this dull weather you *cannot* print much without putting your frames out of doors, and if you do and the film is unprotected, it will not be long before damp gets in, the paper sticks, and the print, if not the negative, is ruined.

Then as to toning. Of course, poor negatives will not give good tones, though I have found Charles's paper quite capable of giving a purple, even with one of my early bad negatives. But I am sure more than half the troubles of beginners in this matter arise from insufficient washing before toning. I give four changes of water *at least*, and at least five minutes to each water. More changes and longer will not hurt. If this is done, no soda or anything else is required, but if you do not wash thoroughly, your print tones slowly and badly and the bath itself is injured. My bath is:

Chlor. gold	1 gr.
Acetate of soda	30 "
Water	5½ oz.

I keep it in an old pyro bottle and in the dark, and it keeps perfectly without any deposit on the bottle. In a green bottle I find there is a little deposit, but none in the blue one.

Many books advise the borax bath. I have not used it, and therefore shall say nothing about it; but what is the use of telling us amateurs to use it only for one *batch* of prints? Why, we small men have not got batches? We have, perhaps, only one or two printing frames, and we do not want to keep storing untuned prints till we have used a sheet of paper. We want to be able to tone a print or two at a time, and then put away our bath till we have got some more ready. With the acetate bath (the gold having, of course, been neutralised with chalk) you can do this, but any bath that will not keep is not, I think, at all suitable for beginners. One more hint and I have done. When you have toned one sheet of paper, or say ten half-plate prints, throw away the bath and make a new one. Do not attempt to freshen up the old bath with gold. The small amount remaining in it is not really worth considering, and the re-made bath often goes wrong. At least, so I find it. Make a fresh bath, and then you *know* you are all right. And 150 prints for one tube of gold are good work for the money. At all events, if you work in this way and take care to make the fixing bath alkaline with ammonia and do not keep it too long, you will find that you do not lose one atom of tone in the fixing.

Societies' Meetings.

Bath—"Some Processes and Illustrations of Photography" was the subject under consideration at the Royal Literary and Scientific Institution, in connection with the above Society and the Literary and Philosophical Association, on the 18th ult. Mr. W. Pumphrey contributed one of his graphic and entertaining lectures, on this occasion descriptive of a tour in the North of Ireland. The lecture was illustrated with a lantern and photographic slides. The other half of the evening was devoted to a lecture by Mr. P. Braham, F.C.S., F.R.M.S., on "Photographic Enlargements of Microscopic Objects." By way of illustration, Mr. Braham, by means of an enlarging apparatus and a ray of limelight, produced a negative of the domestic flea, Mr. H. G. P. Wells assisting, and finally, with the aid of the lantern, threw it, again largely increased, upon the screen. Some charming specimens of photographic work were on view. These included ten enlarged quarter-plate studies produced by diffused sunlight by Mr. Dugdale, landscape enlargements by Mr. Lambert, illustrations of work by a new printing process by Mr. Perren, studies by Mr. C. Payton, a pleasing illustration of panoramic photography by Mr. G. Powell, local lantern slides by Mr. H. G. P. Wells, a splendid collection of Norwegian slides by Mr. Pumphrey, with which the members of the Literary and Philosophical Association had already made an agreeable acquaintance.

Blackheath.—The announcement by this society of a public exhibition of the AMATEUR PHOTOGRAPHER 1891 Prize Lantern Slides brought together a large and appreciative company at the Alexandra Hall, Blackheath, on the 19th ult. Dr. Ernest Clarke, a Vice-President, occupied the chair, and having referred to the recent formation of the club, and the satisfactory progress already made, introduced Mr. Chas. W. Hastings, who gave an admirable description of the slides. Little need be said beyond the fact that the praise already accorded this collection was thoroughly endorsed by all present. The lantern was kindly lent and manipulated by the Rev. W. H. K. Soames, while the pleasure of the exhibition was enhanced by selections of pianoforte and violin music by Mr. and the Misses Pitman. It is satisfactory to note that while giving pleasure to hundreds the club will be enabled to hand over a donation to the National Lifeboat Institution as a result of the entertainment.

Devonport.—There was a very interesting gathering on the 21st ult., as the result of the lantern slide competition, prizes having been offered by the President (Mr. J. B. Huddy). These brought several members to the fore with a general good average of work, though

the winners were clearly properly placed for technical excellence and artistic choice of subject. Judgment had previously been made by a proficient amateur, who rendered his award more valuable by a report full of useful hints and suggestions. The members who competed showed that the Club could produce good results. Several new members were elected, and applications for membership were received. The next evening's work will be in the way of enlargement and development, a branch of photography of great interest and usefulness.

Dorset.—The annual meeting was held on the 28th ult. The following elections were made: Rev. W. Miles Barnes, President; Rev. J. Perkins, Hon. Secretary and Treasurer; Rev. E. F. Pope, Messrs. Skene and D'Aeth, Committee; Mr. D'Aeth, delegate to the Photographic Society of Great Britain. Papers were read, by the President, on "Hand-Cameras;" by the Secretary, "Photographic Lenses;" and by Mr. D'Aeth, "A Tour in Egypt." Five sets of lantern slides by members, and a fine set of views of ironclads and fishing boats by Mr. Wray, of Highgate, were shown at a public meeting in the evening, at which the Secretary explained the object and work of the Association, which circulates among members sundry photographic periodicals and also prints from members' negatives, and awards prizes to the best print in each quarterly circulation.

Glasgow and West of Scotland.—On the 21st ult. the usual monthly meeting was held in the rooms of the Association, 180, West Regent Street—Mr. John Morrison, jun., President, in the chair. The office-bearers for the ensuing year were nominated, and Mr. Wm. Goodwin, Hon. Secretary of the Association, read a paper "About Lenses," which was listened to with great attention.

Kendal.—The usual monthly meeting was held on the 16th ult. Further details respecting the lantern slide competition were arranged, and it was decided that this meeting be held in March instead of February, as previously. Mr. Isaac Braithwaite (Chairman of the section) read an able and instructive paper on "Wide-Angle Lenses," illustrated with blackboard and other sketches; the whole subject was fully gone into, and followed by a prolonged and interesting discussion.

Lowestoft.—A meeting of the above was held at the School of Art, Regent Road, on the 18th ult. After the usual business had been completed, the Chairman gave a demonstration on "A New Way of Dealing with Negatives Under-exposed or of Great Contrasts," which he termed "The Compensation Process." The following is an abridged account:—"The method of photo-printing to be demonstrated to you to-night is a method by which good prints can be obtained from any under-exposed negatives, and negatives of great contrasts, that would be otherwise useless; as by its aid the faintest detail in the shadows can be brought out very satisfactorily, and I am confident that when known it will prove of great assistance to all workers in the art, as it is adaptable to any known process. Of course, we all know that the exact exposure whereby all parts of the object are represented on the negative in their relative value to each other as to light, shadow, and distance, must give the best prints. But how many such do we see? and there are many cases where, and conditions under which, it is next to impossible to expose sufficiently for the shadows without the high lights being materially impaired. Take, for instance, the interior of churches with very dark roofs, and the lower portions of the buildings well lighted; and street scenes with the sun shining on one side only, and many moving objects, necessitating a very short exposure to obtain anything like the required sharpness. It is in such cases as the above we are able to produce by the use of this 'compensation printing' pleasing pictures that otherwise would be most unsatisfactory. In text-books it is laid down that the operator should expose for the shadows, and let the lights take care of themselves. This in the main is no doubt correct, but results prove that if you cannot get the exact necessary exposure for all parts of the object, better prints can be obtained from a plate somewhat under-exposed in conjunction with the method I am about to demonstrate than from one over-exposed. I now pass round this negative of an interior, and will ask you to notice the great density of the high lights, and the faint lines of detail in the roof, in fact, almost clear glass. Here is a frame adapted for fixing the negative and compensation plate, that the same two edges may always be made to coincide. Having fixed the negative in the frame with the film side upwards, I place and fasten a sensitive plate or film thereon, also with the film upwards, close the frame and expose to artificial light for a few seconds, holding the frame perfectly still, that the rays from the burner may be as direct as possible. Remove the plate and develop until the high lights are just perceptible, when the development must be stopped, for if continued much further grey prints would result. Yet it is better to err it too far than not far enough, as reducing is preferable to intensifying. By raising the plate and examining the glass side, this point is more easily determined. Fix, wash, and dry, and our compensation plate is complete. Taking the negative from the frame, I fasten the compensating plate in its place film upwards,

and on it the negative as for printing, in fact reversing their former positions, and proceed to print. The paper I am about using is Eastman's B. When satisfied that the compensating plate is the right density, I again take out the negative and smear round its under edges, that is its glass side, with a little Canada balsam, then replace it in its position and shut up the frame, which will give sufficient pressure to ensure the plates becoming firmly attached when dry. Before, however, doing this, I will take a print from the negative only, that you may see the difference as compared with the one just accomplished. I call this a compensating method of printing, because the very much under-exposed positive which the second plate really is balances or evens, if I may use the term, the different densities of the negative; in fact, if we develop the positive to the same intensity as the negative, we should not be able to print at all, as, of course, all the parts would be of equal density. So long as there is enough density in the positive or compensating plate to restrain the shadows of the negative sufficiently to allow the high lights to print, so long will it assist in obtaining a good result, beyond this it will tend to injure the printing power of the negative."

North London.—Wellington Hall, Islington; next meeting, Tuesday, January 5th, technical night. Visitors are invited. Commence at 8.15 p.m.

North Middlesex.—At the meeting held at Jubilee House, Hornsey Road, on the 28th ult., Mr. J. W. Marchant, President, in the chair, the first business was nomination of officers for election at the annual general meeting, and notice of proposed alterations in the rules. The second part of the meeting was devoted to technical matters. Mr. J. F. Smith, F.R.M.S., showed prints from a number of negatives in duplicate on Obernetter and Ilford printing-out paper. In some cases even Mr. Smith could not say which was which, in others the advantage leaned sometimes to one side, and sometimes to the other, the general opinion being, that the papers were equally good. A general discussion on toning followed. Mr. Marchant then related an extraordinary experience which he had had. He had made an exposure by gas light on a vase of flowers, and on developing the plate found it to be much under-exposed. Having forced the development as far as possible, and the image being barely discernible, he lit the gas, and taking the plate from the bath, showed it to his son, pointing out the lack of detail. While they were looking at it a positive image of the son's face appeared on one corner of the plate about the size of a halfpenny. Thinking it must be a reflection, Mr. Marchant altered the position of the plate, and the lad walked away. Mr. Marchant was astonished to find that the image remained. He showed it to his son, who recognised the portrait, and while they were looking at it the image increased in strength and clearness, until in a few minutes the plate fogged all over and the image was obliterated. The matter was discussed, and as the developer had not been washed from the plate, and bearing in mind the peculiar effects produced in the way of reversal by prolonged exposure, supplementary exposure, etc., it was felt that the mere development of the image and in a positive form might be explained if it could be shown how the reflected light from the boy's face came to be converged on the plate. It was suggested that Mr. Marchant's spectacles might have focussed the rays, but the difference in height of father and son made this improbable. Mr. Marchant explained that the plate had been taken from the makers' box immediately before the exposure, could not have been in contact with any negative or print of his own, and, indeed, that no portrait in the same position existed. The matter was voted a mystery, and explanations are invited. Mr. H. Smith called attention to the new developer, "Rodinal," and a short discussion followed. Two members were elected, and four candidates for election were proposed.

Rochdale and District.—The monthly meeting was held on the 23rd ult., Mr. R. M. Jones in the chair. Several new members were enrolled. Mr. J. W. Hoyle Milnrow was appointed treasurer in place of Mr. T. Leach, resigned. A resolution was also made that a set of the AMATEUR PHOTOGRAPHER competition prints be secured for one of the Tuesday evenings. The meeting closed with a discussion about the coming exhibition in connection with the society, when a good show is expected to be made.

South Hornsey.—At the ordinary general meeting held on the 21st ult., Mr. P. A. Legge in the chair, several members brought prints and negatives for criticism. An interesting discussion about lenses and other subjects connected with photography followed and brought the evening to a conclusion. The next meeting will take place on Monday, January 18th.

South London.—The ordinary meeting was held on the 21st ult., Mr. F. W. Webb in the chair. The evening was devoted to the explanation and demonstration of various "printing processes." The Autocopyist Company first gave a demonstration of their method of easily producing a large number of permanent prints. A film of gelatinised vegetable parchment was sensitised on a three per cent. bath of bichromate of potash, to which a few drops of ammonia were added. After drying, the film was exposed in the

usual way behind a negative. The great advantage of the process over colotype was that it could easily be seen when printing had proceeded far enough. The back of the film was exposed to the light for five minutes to "take down the relief." The bichromate was washed out with water, and the film after being stretched in a frame was inked with a roller with a special ink, when prints were made from it in an ordinary copying press. The films were practically indestructible, and could be used over and over again, being rendered pliable for stretching by soaking in glycerine and water. Prints in platinum (the President), silver (Mr. Herbert), and bromide (Mr. Whitby) from a 12 by 10 negative of Shanklin Chine were compared and examined. Mr. Herbert said it was always his practice in silver printing to salt the paper before toning, in a bath containing one ounce of salt to a pint of water, as it produced more brilliant prints. They were then washed twice in water and toned in a borax bath—half teaspoonful of borax to a pint of water. The toning action was stopped by placing the prints in water. As a preventative of blisters, Mr. Herbert used a fixing bath made as follows:—Two ounces of hypo, dissolved in half a pint of perfectly cold water, and a teaspoonful of borax in half pint of warm water, the two being mixed together before using. Mr. Miller said he always used a few drops of ammonia for the same purpose. It also assisted the washing out of the hypo. Mr. Whitby, in explaining the method of printing on bromide paper, said that he considered it possessed advantages over other methods of printing. To get rid of any yellow stain which might be left in the prints after development and washing, he used a strong solution of tartaric acid. Prints could be reduced in a dilute solution of chloride of lime. Fading was the result of insufficient washing. The Honorary Secretary then proceeded to develop some black Kallitype prints, but owing to want of time the remainder of this demonstration of this process was deferred to a future meeting, when the means by which purple and sepia tones can be produced will be explained. Fixtures: January 4th (beginners' night), paper and demonstration in "Developing," by Mr. F. W. Webb.

Span Valley.—The December meeting of this society was held on the 8th ult., when the annual exhibition of members' slides took place in the large room of the Freemasons' Lodge, Whitcliffe. There was a good attendance of members, and the meeting was a very enjoyable and profitable one. Dr. Farrow (President) presided, and the views were shown by the aid of Mr. B. H. Goldthorp's lantern. In all over 240 specimens were shown of members' work, which included some admirable views of Bolton Abbey and the Woods, Fountains Abbey, Knaresboro', Southport, the Isle of Man, etc., and many local bits. Most interest was evinced in one or two ghost pictures, and an illustration of so-called thought-bodies. At the close Mr. Goldthorp exhibited some of the latest specimens of professional work in landscapes, seascapes, and statuary. The members' slides were individually voted upon as to their suitability for public exhibition, and arrangements were made for holding such an exhibition. This took place on the 21st ult., in the Central Hall, Cleckheaton. Although the night was most unfavourable, there was a pretty good audience, and the society undoubtedly scored a success on this their first appearance before the public. A large and varied collection of members' slides were shown, as well as one of the American sets ("The White Mountains of New Hampshire"), and Mr. Arthur Anderton, who presided, spoke most encouragingly of the entertainment. Dr. Farrow, the President of the society, explained the views, and several songs and recitations were given during the evening. The proceeds will go towards the Maddox Testimonial Fund, to which the members are also individually subscribing.

West Surrey.—The usual fortnightly meeting was held at St. Mark's Schools, Battersea Rise, on the 23rd ult. Mr. P. A. Martin occupied the chair, and, considering the fog, a fair attendance was recorded. The usual business having been disposed of, Mr. W. H. Wilshire gave his demonstration of "Reducing Cameras, and how to Use them." He exhibited a camera made by himself for the purpose of reduction, and explained fully how it was constructed. He afterwards made several exposures by the magnesium light, the results being all that could be desired. Mr. Graham then, assisted by Mr. Wilshire, exhibited his flash-light lamps, exposing two plates upon those present. The idea conceived by Mr. Graham in his lamp is simple in the extreme, but at the same time it is effective. The results of the exposures show that the lamp is all that can be desired. A public "Lantern Evening" will take place on January 7th next, in the large hall attached to the schools, when some first-class transparencies will be shown.



The Paisley Photographic Society will open their sixth annual exhibition on Tuesday, February 23rd, and admission will be free for one month. The Secretary, Mr. David B. Jack, Glencairn, Blackhall, will be pleased to give any further information.

To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Greed Lane, Ludgate Hill, London, E.C.**

RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

QUERIES.

5325. **Building Studio.**—I am thinking of building a studio in sections, size about 30 ft. by 14 ft. Will any one of your kind readers kindly say how I should proceed, and also probable cost of the same?—ANXIOUS ONE.

5326. **Copying Hymns.**—Could any other reader give me any information how to proceed to copy hymns from a book to make lantern slides, what exposure would require indoors in front of a window facing south (I use Ilford ordinary plates), and the best way to proceed to transfer to lantern plates, and any other information regarding same?—COPYER.

5327. **Flash Lamp.**—Should be glad to receive information with regard to the most suitable flash lamp for an amateur to use to take an ordinary photograph with, stating all working directions.—PYRO.

5328. **Retouching, Book on.**—Should be glad to receive information as to best work on the "art of retouching," with price.—PYRO.

5329. **Mounting.**—I should be glad to receive information with regard to the best method of mounting the Ilford printing-out paper.—PYRO.

5330. **Landscapes with Snow.**—Will some brother amateur who has developed the above successfully, tell me his mode of procedure? The plates used are Thomas's thickly-coated.—T. H. S.

5331. **Eastman Roller Films.**—Will any amateur who has used these films for 7½ by 5 size, tell me if they are as good as cut films or plates, and if there is any mechanical difficulty in developing them?—J. GORDON.

5332. **Potassium Bromide of.**—Will bromide of potassium keep a long time? I have had some in a packet for about twelve months; it seems all right to look at, and I should like to know if it has lost any of its strength, as I want to use it in making up a developer.—R. V. B.

5333. **Sodium Sulphite.**—Are sodium sulphite, sulphite of sodium, and sulphite of soda the same chemical?—R. V. B.

5334. **Lens.**—Is the portrait lens or any of the lenses made by Shepherd, of Farringdon Road, capable of turning out good pictures? I should like to know, as I have the chance of getting one cheap.—R. V. B.

5335. **Toning and Fixing Bath.**—Is the following toning and fixing bath suitable for a young beginner? If not, which bath do the readers of this paper recommend?—

Chloride of gold	4 gr.
Nitrate of silver	16 "
Hypo-sulphite of soda .. .	4 oz.
Water	8 oz.

—AN AMATEUR PHOTOGRAPHER.

5336. **Rodinal.**—Has any reader tried the new developer known as "Rodinal"?—ACHRODYNAMICS.

5337. **Encaustic Paste.**—Which encaustic paste can the readers of the AMATEUR PHOTOGRAPHER recommend as best for albumenised paper, viz.:—

Pure white wax	500 gr.
Gum elemi	10 "
Benzole	4 drms.
Essence of lavender .. .	6 "
Oil of spike	1 "

or:

Pure white wax	100 gr.
Dammar varnish	40 minim.
Pure oil of turpentine .. .	100 "

The above are from Wall's "Dictionary."—TERMINI.

5338. **Cresco-Fylma.**—What note in the way of recommendation can the readers of this paper give me of the "Cresco-Fylma" enlarging solution? An answer will oblige.—QUERIST.

5339. **Lantern.**—What make of magic lantern can an experienced reader recommend for an amateur photographer with a few good slides?—A. P.

5340. **Celerotype.**—I should like to have particulars of the Celerotype paper if any reader could oblige me with them.—LITHO.

5341. **Stereoscopic Lenses.**—The two halves of a plate sometimes are not equal in density, although both lenses stopped alike. Is there any cause and remedy?—ICONOCLAST II.

5342. **Spots on Negative.**—I have a negative developed with hydroquinone that a few days after making begins to show spots (a kind of brown colour) on the film apparently, on the glass side, and on the film side a metallic appearance. What can I do to get rid of them, as they obstruct the light and print white? What is the cause? Negative is not varnished.—ICONOCLAST II.

5343. **Fogged Negative.**—Two negatives I have just taken show unmistakable fog on the top of negative which is covered by rebate of slide, the other part, the bottom, being quite clear glass. The negatives are rather over-exposed, but developed fairly well, except the fog. Can any reader suggest cause? Plates, Ilford ordinary; developer, hydroquinone Ilford formula.—ICONOCLAST II.

5344. **Copying.**—Can I copy a mounted cabinet photograph with a Lancaster's half-plate 1891 Instantograph? What exposure with Ilford ordinary plates? How should I proceed?—J. T.

5345. **Instantograph.**—Will anyone who has a half-plate Instantograph (not brass bound) kindly give me the following dimensions: (1) Width from back to front of body. (2) Ditto swing-back without focussing frame. (3) Size square of body. (4) Ditto swing-back. (5) Ditto rising front. (6) Width of sliding base. And please state thickness of wood of body.—N. T. H.

5346. **Preservative for Pyro.**—Will some kind reader inform me which is the better preservative for pyro, viz., nitric acid, sal ammoniac, or sulphuric acid? In one of the "Almanacks" sal ammoniac is said to be A1. I find that if sulphite of soda and citric acid are used, the solution will not keep for any length of time.—PYRO.

QUERIES UNANSWERED.

Dec. 25.—Nos. 5321, 5324.

ANSWERS.

5243. **Ghost Pictures.**—To make ghost pictures, arrange your ghost and give a rather short exposure, then cap the lens, let the ghost retire, and give the exposure for the room; about one-third of the whole exposure should be given to the ghost, and two-thirds without the ghost.—MEMNON.

5247. **Actinometer.**—See "Photographic Procedure" of last week; probably you may gain some hints from that.—MEMNON.

5250. **Laverne's Adapter.**—This is useful for small lenses, but not so efficient for large ones.—MEMNON.

5255. **Reducing.**—Try Dresser's little book on lantern slide making.—MEMNON.

5266. **Bleaching Out.**—It is impossible to state whether Mr. Sherman's process is good, unless further information is given as to where to find the process or what it is.—MEMNON.

5289. **Lantern Slides Wanted.**—Fry, York and Son, West, Valentine, Pumphrey, or any large lantern slide makers.—MEMNON.

5292. **Washing Gelatin-Chloride Prints.**—Probably Mr. Lewis refers to the possibility of the prints being torn by the action of the water; there can be no other disastrous effect.—MEMNON.

5293. **Opals.**—These are mounted on plush block by the aid of a strong hot glue and pressure, and in frames in the ordinary way.—MEMNON.

5294. **Enlarging Apparatus.**—(1) The Muttin-in-Purvo is reliable. (2) The Optinuss would certainly act better than the lens supplied, which has a very small ratio aperture. (3) Yes, there are carriers. (4) There are no other carriers. (5) The dark slide is the same as usual, and the opal, etc., is in register. (6) Yes, it can be used at night; I always use mine then.—MEMNON.

5298. **Changing Bag.**—The best material for this is thin black kid or else black india-rubber cloth.—MEMNON.

5299. **Magnesium Powder.**—This depends solely upon the aperture of the lens and speed of plate, but with f/10 and a rapid plate about 15 gr. will be enough.—MEMNON.

5301. **Backed Plates.**—These can be probably obtained from R. W. Thomas and Co., Pall Mall.—MEMNON.

5307. **Hand-Camera, to Make.**—I have made my hand-camera to work with one of Eastman's film holders which I bought cheap second-hand, but I daresay "R. V. B." will want him to work with plates, and if he will write me I shall be very glad to help him. Editor has my address.—E. G. S.

5312. **Group Taking.**—Mr. F. W. Hart, of Kingsland Gate, has some very good arrangements for large flash-light work.—MEMNON.

5316. **Stains after Intensification.**—These are caused either by the negative not being free from hypo, or from not washing between bleaching and blackening; the remedies are obvious.—MEMNON.

5317. **Omnigraph.**—"Rellaw," will not be doing anything unreasonable by purchasing the Omnigraph,

manufactured by Lancaster, of Birmingham.—LONDON.

5318. **Griffith's Enlarging Cameras.**—Both cameras are worth the money and are efficient.—MEMNON.

5319. **Ammonia and Hydroquinone.**—You ask what effect the strongest ammonia will have in a one-solution hydroquinone developer. I cannot see why you wish to add ammonia to the solution if it is properly made up, as it will certainly make development uncontrollable by the picture flashing up. Besides, ammonia does not work well with hydroquinone.—S. E. K.

5320. **Sodium Sulphite or Sulphate.**—The chemical action of these salts is so dissimilar for use in photography that I would not advise you to endeavour to convert one into the other, as they are prepared by totally different means. The sulphite acts as a powerful reducer, but I am not aware that the sulphate of soda is of any use in development.—S. E. K.

5322. **Camera Case.**—Use Nubian blacking or else apply first an alcoholic solution of perchloride of iron and then, when this is dry, use an alcoholic solution of tannin.—MEMNON.

5323. **Lighting with Magneslum.**—Use a light each side of camera, place the camera as near as you want to. Gas will improve it by lightening the shadows.—MEMNON.

EDITORIAL.

SPECIAL NOTICE.—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

ALEX. MACKIE AND W. E. DEBENHAM.—The matter of the incident of the Photographic Society of Great Britain quoted has, we think, been sufficiently well ventilated in our columns, and we are therefore reluctantly compelled to return your letters.

T. W.—You will find a very complete leader on copying in our issue of June 26th, 1891, page 457.

B. SC.—There is no good English work published, to our knowledge. Can you get access to the Proceedings of the Royal Astronomical Society? If you can read German we can help you.

ENTERKIN.—(1) We should prefer the A lens decidedly. (2) Yes, the distortion would not be noticeable.

G.—The buyer pays the deposit fee, and the fee for report is 2s. 6d. You cannot get a more satisfactory landscape lens than the one you name.

C. V. D.—Pressure of work and space has prevented us from criticising the prius. We will try and criticise yours in a day or two.

C. O.—(1) No, we certainly prefer the R.R. for No. 1 subject, and No. 2 can be overcome by stopping down. Regardless of expense, we should say a Swift portrait Paragon, a Voiglander, or a Zeiss doublet. Thanks for good wishes.

RUETANA.—Letter by post.

F. W. WALTER.—The addition of 1 oz. of acid sulphite of sodium to every ounce of dry pyro in your solution will certainly assist in preventing stains, but not entirely. Why not try eikonogen, or the new developer, Rodinal? This last never stains anything.

R. V. B.—The Hackney Photographic Society, which meets at Morley Hall, is certainly the best for you. Write the Secretary, W. Fenton Jones, 6, Victoria Street, King Edward's Road, Hackney, N.E.

H. B. DAVIS.—No. 1 for films, No. 4 for dark-slides, No. 6 for magazines.

M. POWELL.—Many thanks for the prints, which are very good, and quite up to our competition standard. Why don't you compete?

GEO. R. (Corfu)—The prints came safely to hand, and are really very good, and are fully up to competition standard.

LEWIS.—We will print on and report on your paper next week.

W. J. NICHOLL.—We are not aware that a full report of the society's meeting has been published. To get a verbatim report, we should advise you to write to the Secretary of the society. Probably Mr. Wall referred to the extract from Mr. Traill Taylor's articles on distortion. Spectacle lenses are used, but they are makeshifts only.

H. E. SMITH.—Now you sit down quietly, and think, you want to see the picture right, way up and right way round on the screen, and the discs should be next to the condenser at the bottom. You please yourself as to which colour goes next to the film.

S. A. WARBURTON.—Thanks for your letter of explanation, but, notwithstanding your statements, we must repeat that no invitation, catalogue, or programme ever reached us.

ALFRED CORNISH.—Your note from Tasmania reached us safely. Sorry to hear that you were not satisfied with your purchase. Hope the plates will turn out all right. Shall be glad to have a few "experiences" when you can spare time.

H. HARRIS.—Glad to find that you have entered the "Holidays with the Camera" competition.

G. PARKER.—Always pleased to help you. The acid fixing bath is as follows:—

Sodium sulphite	1 oz.
Tartaric acid	2 1/2 "
Hypo.	4 "
Water	20 "

Dissolve in the order given.

"Holidays with the Camera" Competition.

PHOTOGRAPHS have been received from the following:

Mr. Francis Powell	Dunoon
Mr. W. Gladstone	Bo'ness
Mr. W. R. Ferguson	Newcastle-on-Tyne
Surgeon A. G. B. Newland ..	Burma
Rev. T. Perkins	Shaftesbury.
Mr. C. W. Bassano	Old Hill, Staffs.
Mr. F. H. J. Ruel	St. John, New Brunswick
Mr. J. Kidson Taylor	Buxton
Mr. W. Errington Corran ..	Newcastle-on-Tyne
Mr. C. Livingston	London
Mr. C. Emanuel	London
Miss E. G. Stone	London
Mr. A. R. Dresser	London
Mr. A. Stieglitz	New York, U.S.A.
Mr. H. Goodwillie	Dublin
Miss Sophie E. Douglas ..	Perth
Mr. R. H. Llewellyn Roberts ..	Clevedon
Rev. H. Harris	Highbrook
Mr. R. Gill	Chorley
Mr. Hugo Meynell	Stoke-on-Trent
Mr. J. R. Kelsall	Dublin
Mr. H. Holt	Liverpool
Mr. A. W. Gottlieb	Shrewsbury
Mr. J. Oswell Bury	Wrexham
Mr. and Mrs. J. E. Ellis ..	London
Mr. F. H. Horrex	London
Mr. Percy Sheard	Leeds
Mr. W. B. Dart	Devon
Mr. J. H. Welch	Liverpool
Mr. T. James	Worcester
Mr. G. F. Firth	Wakefield
Mr. T. Glazebrook	Ashton-under-Lyne

Messrs. Brause and Steinert, 30, Burg-Strasse, Berlin C., have forwarded us their new price list of photographic requisites and apparatus for 1892.

Sale and Exchange.

CHARGE.—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

Backgrounds.—Pair of backgrounds, in flatted oils, new and perfect, 8 ft. by 88 in., on linen and rollers, exterior and interior; 15s. 6d. each; hargains; photographs forwarded; satisfaction guaranteed. — Hare, Photographer, Sutton, Surrey.

Dark Slides, etc.—Dark slides, three half and three quarter Instantograph, new, 6s. 6d. and 4s. 9d. each; half-plate new camera, all new movements, 50s.; bargain; approval. — Adams, Harold Wood, Essex.

Hand-Cameras, etc.—No. 4 Junior Kodak, for 5 by 4 pictures, filled with spool of transparent film, and as new, with manual, solid leather carrying case, and light bamboo tripod; for £8 5s.; cost nearly £11; approval to Editor. — No. 285, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Negatives.—Quarter-plate negatives for sale at 1s. each; send stamped addressed envelope for list. — Ed. Hughes, 4, Colville Gardens, Bayswater, London. Fifty quarter-plate instantaneous negatives of London, suitable for making lantern slides; price 40s. — John Stabb, 154, Queen's Road, Bayswater.

Sets.—Whole-plate square sliding body portrait camera and lens (by Rouch), single slide, inner frames, pneumatic flap shutter, case of stops, strong non-folding tripod, all in first-rate condition; price £5. — F. Morten, South Bank, Surbiton.

— Roberts' hand-camera, new condition, 18 plates, two finders, R.R. lens, working f/6, Thornton-Pickard shutter, walking-stick tripod (Pumphrey's); together or separate. — Edgar Hesse, 5, Chandos Road, Stratford, E.

Camera, 7 1/2 by 5 (by McKellen), three double backs, rectilinear lens, tripod, and case, complete, in perfect condition; cost £16 10s.; price £9 10s. — Cave, Chemist, Southport.

Shutter.—Shew's Eclipse shutter, for whole-plate and under, good as new; cost 32s.; price 10s. — John Stabb, 154, Queen's Road, Bayswater.

Sundries.—AMATEUR PHOTOGRAPHER for sale, vols. i. up to date, less iii., iv., v., vi., little used; what offers? — Edwards, Station Road, Manningtree, Essex.

For sale, 12 ft. oxygen cylinder, with patent regulator, £2; sheet, 11 ft. by 12 ft., 10s; Perken and Raymont's combination gas jet, 10s.; all in good condition. — T. Putland, High Street, Tunbridge Wells.

Light quarter-plate stand, 6s.; or exchange whole or half plate dishes, printing frames, etc.; by letter. — B., 48, Sussex Gardens, London.

WANTED.

Cameras, etc.—A good half-plate camera (Underwood's Instanto preferred), with three double backs; state lowest price. — T. Newby, 66, Kenwyn Road, Clapham.

Cameras, Lenses, etc.—Half-plate camera, first-class make, with dark-slides, long extension; also whole-plate R.R. lens, by good maker; both must pass Editor's inspection. — Prices, with full descriptions, to R. E., AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Hand-Cameras, etc.—Good hand-camera; cash; approval. — Rev. Baillie, Rectory, Oundle, Northants. Shew's quarter-plate Eclipse, with or without double slides, but without lens. — Fullest particulars to Alfred Hendrie, Thornwood, Uddington, N.B.

Key camera, latest pattern, also two quarter-plate Eastman roller-slides, recent design; approval. — D. L., Royal Cork Yacht Club, Queenstown.

A second-hand hand-camera. — Apply to Miss Trollope, Cobham, Surrey.

Lantern.—Biunial lantern, for limelight only, with mahogany body and good lenses. — H. Chorlton, Totington, Lancs.

A biunial limelight lantern, mahogany body, brass fronts; will exchange for new rational bicycle, 52 in. — John Lowden, 37, Maryland Road, Stratford, Essex.

Lenses, etc.—C.D.V. portrait lens, quick-acting, by good English maker, Optimum preferred, cheap for cash. — Pratt, East Bridgford, Notts.

No. 3 Suter landscape lens, latest make, iris, f/12, or Wray half-plate. — Kelly, The Lodge, Mountrath, Ireland.

Swift's rapid Paragon half-plate lens, or good maker. Exchange nickel-plated banjo, Long's American head and grand tone; or new silver watch. — French, 64, Stonefield Road, Hastings.

Lens, by good maker, for 5 by 4 hand-camera; will exchange half-plate wide-angle lens (by Newton) for same. — Kidwell, 1, Cumberland Road, Liscard, Cheshire.

Sets.—Wanted for Penang, good half-plate camera, slides, lens, shutter, and stand, also cheap set of dishes, printing frames, etc. — H. Wood, Mount Sorrel, Loughborough.

Full or half plate camera, by reputed maker, with or without lens, all latest movements, tripod, slides, case; state price. — Bissett, Athenaeum, Glasgow.

Half or whole plate camera outfit, with all accessories, must have all latest improvements, and equal new, Lancaster's preferred; state lowest price on approval, and all particulars. — T. Hargreaves, Bolton-by-Bolland, Clitheroe.

Sundries.—Developing dishes, 18 by 12, or larger, for cash. — Murray, Speen, Newbury.

The Lantern and the Microscope.

LANTERN, with 4 1/2 in. Compound Condenser and one Compound Achromatic Objective of either 4, 6, 8, 10, or 12 inches back foci. (For full description see Lantern Catalogue)... £9 0 0

Extra Objectives, of various foci, each ... 1 10 0

Patent Triple Condenser, collecting 30 to 40 per cent. more light than the best double condensers. Interchangeable lenses can be supplied for lengthening or shortening the conjugate focus to suit the focus of the objectives in use. The lens nearest the light being protected by a cover glass is not liable to fracture by heat. (Patent applied for.) Extra ... 0 15 0

"Eclipse" Carrier. (See Lantern Catalogue) ... 0 5 0

PATENT LANTERN MICROSCOPE, of highest optical finish, with rack and pinion movements to both sub-stage and objective-holder, and also FINE SCREW FOCUSING ADJUSTMENT, all the necessary fittings for entirely rotating the polarising and analysing prisms of Polariscope, compound wheel of diaphragms, concave sub-stage field lens, two sub-stage condensers, Barlow-lens amplifier, three objective adapters, etc., all fitted in polished Mahogany Cabinet, with water trough ... £9 0 0

W. I. CHADWICK,
2, St. Mary Street, Manchester.

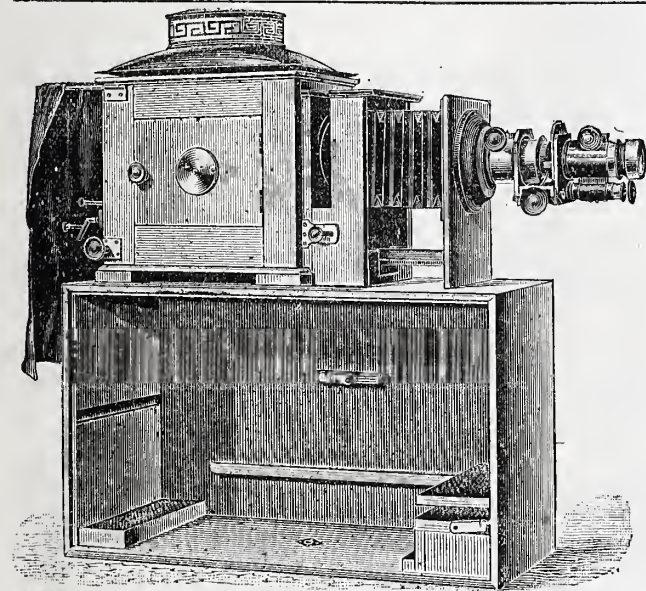
PICTURE MAKING BY PHOTOGRAPHY.

THE LIFE AND WORK OF MR. H. P. ROBINSON.

Illustrated with Sixty or Seventy Examples of Mr. Robinson's Photographic Work.

MR. CHARLES W. HASTINGS has in preparation a Lecture descriptive of the Life and Work of Mr. H. P. Robinson. The Lecture will be illustrated by means of the Optical Lantern, and will contain much instruction upon "Picture Making by Photography," and many interesting facts, recollections, and anecdotes of Mr. Robinson's long life and work, both as an artist and a writer upon photographic matters. Mr. Hastings will be in a position to accept engagements about the middle of January.

Further particulars will be sent on receipt of letter addressed to **CHARLES W. HASTINGS, SIDCUP, KENT.**



THE

“AMATEUR PHOTOGRAPHER” COMPETITIONS, 1892.

All Photographs must be actually received on or before the dates given below:—

- Jan. 25.—Monthly Photographic ... (Inland Scenery, with or without Figure).
 Feb. 22.— „ „ ... (Sea Pieces and River Scenery).
 Mar. 21.— „ „ ... (Portraiture and Figure Study).
 „ 31.—Ladies' Third Annual Competition.
 Apl. 25.—Monthly Photographic ... (Inland Scenery, with or without Figure).
 May 23.— „ „ ... (Sea Pieces and River Scenery).
 June 20.— „ „ ... (Portraiture and Figure Study).
 „ 30.—“Photography at Home” Competition.
 July 25.—Monthly Photographic ... (Inland Scenery, with or without Figure).
 Aug. 22.— „ „ ... (Sea Pieces and River Scenery).
 Sept. 19.— „ „ ... (Portraiture and Figure Study).
 „ 30.—Fifth Annual Lantern Slide Competition.
 Oct. 24.—Monthly Photographic ... (Inland Scenery, with or without Figure).
 Nov. 21.— „ „ ... (Sea Pieces and River Scenery).
 Dec. 19.— „ „ ... (Portraiture and Figure Study).
 „ 31.—“Holidays with the Camera” Competition.

NOTE.—It is intended to publish an Illustrated Supplement to the “AMATEUR PHOTOGRAPHER” every month, in which the prize photographs will be reproduced and all Monthly Competition photographs criticised. At Christmas, an Album will probably be issued, to which competitors will be asked to subscribe. Further particulars will be announced on the entry forms.

The Quarterly Competitions will be dealt with in a high-class publication, illustrated with first-class reproductions of selected photographs; this will be also published by subscription, particulars being announced on the entry forms.

All Prizes will be in the form of Medals from the “AMATEUR PHOTOGRAPHER” several dies. No prize winner will be allowed to compete again for a Medal of the same value as that awarded him. The “AMATEUR PHOTOGRAPHER” Monthly Competitions are for the encouragement of beginners and those who have never entered a competition or exhibited their work.

Further Particulars, Entry Forms, etc., will be sent on application to (stamped addressed envelope must be enclosed)—

THE EDITOR, “AMATEUR PHOTOGRAPHER,”

1, CREED LANE, LONDON, E.C.

NOTE.—ALL APPLICATIONS SHOULD BE ENDORSED “COMPETITIONS.”

The AMATEUR PHOTOGRAPHER

Telephone No. 1645 Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 379. Vol. XV.]

FRIDAY, JANUARY 8, 1892.

[PRICE TWOPENCE.]

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—Result of Quarterly Examination—The next Quarterly Examination—Hurter and Driffeld—New Postal Photographic Club—Lippmann's Demonstration—"Subject" Club—Mr. Debenham and Phot. Soc. of Great Britain—Our Competitions—Note of our going earlier to press—Societies' Reports—P. H. Newman's Lecture—Society Papers.

LEADER.—A Reviewer Reviewed.

LETTERS.—Vienna Exhibition, 1891 (Expectans)—Proposed "Subject" Club (A. H. Blake)—Phot. Soc. of Great Britain (W. E. Debenham)—Travels with the Camera (Fretwell).

ARTICLES.—Photographic Procedure (Wall)—A Method to Prove Correct Exposure (W. H. Ellis)—Instantaneous Photography (Harrison)—Flexible Metallic Films on Paper—Pyrocatechin Developer for Brown Tones.

NOTES.—"The Vegetarian"—Camera Club Fixtures—The "Owlsgood" Rocking Developing Dish—New Photographic Lens—Ives' Colour Photography.

REVIEWS.—"Photographische Almanac"—"Rapport General de la Commission Permanente"—"Practical Photographer"—"American Annual"—"Lantern Slides."

APPARATUS.—"Professional" Backing Plates.

QUARTERLY EXAMINATIONS IN PHOTOGRAPHY.

EXHIBITIONS.—"One Man" Exhibition at the Camera Club—Industrial Exhibition at the Polytechnic.

SOCIETIES' MEETINGS.—Camera Club—Cheltenham—Croydon—Greenock—Leeds—North London—Photographic Society of Great Britain—Richmond—Shropshire—Tyneside.

THE Examiners for our Quarterly Examinations in Photography have handed in their report, from which it appears that the following are the successful competitors:—

- 1st. "THEO" (Theodore Hubback),
22, Falkner Square, Liverpool.
- 2nd. "MONDS" (John Dixon, M.D.),
133, Jamaica Road, Bermondsey, S.E.
- 3rd. "ENALOF" (F. O. Lane),
19a, Gladstone Road, Sparkbrook, Birmingham.

We shall, therefore, be obliged if these gentlemen will kindly let us know what they desire as prizes, to the value of two guineas, one guinea, and half a guinea respectively. The Examiners report that on the whole the practical work was of a high order, the most unsatisfactory being, however, the lantern slides.

OUR next Quarterly Examination we have determined to devote entirely to beginners, and as far as possible elementary questions only will be set. The practical work also will be of a much easier description than in the last. Past successful candidates will not be allowed to compete, but we hope that some of our younger subscribers will enter for this. The answers will be criticised by the examiners, and we hope rather more fully than before. We publish this week the first three questions, and the full syllabus will be forwarded on application.

MESSRS. HURTER AND DRIFFIELD have promised to let us have an article upon their actinograph in answer to Mr. Wall's notes on the same in "Photographic Procedure." Messrs. Hurter and Driffeld state in their letter that the notes, being founded on an outside criticism, may be hurtful to them, and they further inform us that their method of speed determination has been adopted, and that plates can be obtained marked with their speeds. We are pleased to give Messrs. Hurter and Driffeld this right of reply, but at the same time we are certain that Mr. Wall's remarks were made in all good faith.

A CORRESPONDENT writes asking us to use our influence in the formation of a New Postal Photographic Club. He will be very glad to receive the name and address of any lady or gentleman who will join a postal club formed on somewhat new lines; no subscriptions and no entrance fees will be required. The only requirement from those desirous of joining is a specimen print of their work, which

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (*All Communications should reach the Editor by Tuesday.*)

TERMS OF SUBSCRIPTION—

UNITED KINGDOM.....	Six Months, 5s. 6d.....	Twelve Months, 10s. 10d.
POSTAL UNION	" " 6s. 6d.....	" " 13s. 0d.
OUT OF POSTAL UNION	" " 7s. 9d.....	" " 15s. 3d.

TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (*SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.*)

"Amateur Photographer" Monthly Competition No. 32.—"INLAND SCENERY, WITH OR WITHOUT FIGURE." Latest day, January 25th.—Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, February 12th.)

will be returned, if desired, with the rules. All letters should be addressed to H. Eyre, Crowborough, Sussex.

We are always pleased to assist in any way possible in the formation of such institutions as these, as they cannot but be extremely useful to the individual members, and considerably advance their technical and artistic work. For such a club as this to be successful, however, it is essential that there should be one master mind to arrange details and criticise and find fault with the work sent in, and point out suggested improvements and probabilities of improvement.

PROFESSOR LIPPMANN has been giving some very successful demonstrations of his process of obtaining coloured images of the spectrum at the Conference of the Conservatoire National des Arts et Métiers, Paris, and has shown the results to a large audience, and he concluded his address by saying that although at present the process was adapted solely for use with pure colours, there was no reason that he could see why it should not be utilised for the compound colours—provided it was found possible to obtain a plate equally sensitive to all the colours in due relation to their luminosity. The famous astronomer, Mr. Janssen, also gave an exhaustive *resume* of the work of photography in connection with astronomy, to which we hope to refer later on.

We publish a letter this week from a correspondent at Eton, who suggests the formation of a society or club which should practically be devoted to the illustration of set subjects by the aid of photography. We do not wish for one moment to throw cold water on the idea, but speaking from our past experience, we cannot say that we consider there is much hope for success. Our "subject" competitions have been practically a failure, and even in America, where such competitions find far more favour than here, they have not been eminently successful. Still, those of our readers who are anxious to try some such club, will please note the address of the writer. Whether the club be successful or not, there is not the slightest doubt even attempting such work will be an education.

We have received a letter from Mr. W. E. Debenham, pointing out that it was hardly fair on our part to stop the discussion about the Photographic Society of Great Britain at the point we did. We have, therefore, inserted his letter this week, not wishing to be in any way unfair, but the subject must now be finally dropped so far as we are concerned. We do not intend to admit any more correspondence or refer to the same again.

We have had a large number of applications for the Competition entry forms and particulars, and we hope they will be issued this week. It will be noted from the list of competitions that there are practically only three subjects—Inland Scenery, with or without figures, Sea Pieces and River Scenery, and Portraiture and Figure Study, and that these recur every quarter. We have learnt from our past experience that these are the Competitions which have received the most support, and that special subjects, such as were included last year, did not receive the support which they should do. The four special Competitions, as will be seen, are sandwiched in at the end of each quarter, thus giving competitors for the Monthly Competitions ample time to prepare their prints, and we think our competitors will be perfectly satisfied with this arrangement. The pictures sent in for competition will be acknowledged as usual in our issue following the close of the Competition, but the announcement of the awards and criticisms on the pictures

will not be made, except in the Special Illustrated Supplement, which will be issued about a fortnight later. There seems to be considerable misconception about this Illustrated Supplement. We do not intend in any way to make any extra charge for this; it will be issued in the ordinary course with the AMATEUR PHOTOGRAPHER, and will form part and parcel of the paper.

WE would call the attention of our correspondents and Secretaries of Societies to the fact that we are now going to press slightly earlier than heretofore, and that we are compelled, therefore, to request them to furnish us with reports, etc., at the latest by the first post on Tuesday. We do not, in any case, guarantee the insertion of matter received after Tuesday morning's post.

WE have received numerous letters expressive of regret at the discontinuance of the *Photographic Reporter*. We shall hope, however, to incorporate the most useful features in these columns. We shall always be pleased to receive papers read before societies, and as far as possible we shall publish the same; but we cannot promise to do so in their entirety at all times. We shall also include weekly a list of society fixtures, and will forward to the Secretaries of Societies post-cards to be filled up for this purpose, and trust to them to support us in this respect.

MR. P. H. NEWMAN will, we hear, give a lecture on Thursday next at 8 p.m., at the London and Provincial Photographic Society, and we think that a very instructive and enjoyable evening will be spent.

OUR readers will probably be fully alive to the curious statements that are made about photography in what may be called lay papers, but we think that the following, which has been sent us by a correspondent, is, as he suggests, about as lucid and brief as it can be:—

"SENSITISED PAPER.—For those readers who are interested with photography, the following will be of value to them. Take fifty grains of common salt to every ounce of water, and 120 grains of nitrate of silver to one ounce of water. To fix the drawing on the paper it must first of all be washed in lukewarm water; then dipped into a solution of hyposulphite of soda, about one ounce to every pint of water; afterwards in pure water, and dried."

We mercifully withhold the name of the paper in which this appeared, and can only express our deep sympathy with the unfortunate "readers interested in photography."

A REVIEWER REVIEWED.

OUR attention has been called to a critique upon Mr. Walter E. Woodbury's book on "Gelatin-chloride Printing," which appeared in the *Daily Chronicle* of the 28th ult., which requires a short review from us. We are accustomed to wonderful and startling announcements of the outside world and non-illuminati, but, generally, for its reputation's sake, a paper either briefly reviews a book or else hands it over to some specialist competent to fully criticise; but in the case in point we think it would have been better to let it alone altogether than issue such a critique.

The reviewer says:—"It is certain that Mr. Woodbury has earned the gratitude of photographic students by describing a new departure in their art-science." As the book opens with a brief historical note, showing that "as early as 1865" G. Wharton Simpson utilised a collodion emulsion of chloride of silver, and that "in the year 1882 Abney suggested a 'chloro-citrate,' or citro-chloride emulsion, which contained chloride of silver and citrate of silver emulsified in gelatine," and, further, that a gelatino-

chloride paper was introduced by Obernetter in 1885, we fail to see how this can be termed "a new departure."

The critic then informs us that a negative "is a picture made by the action of light on a sensitive gelatine film. . . . Everything is reversed, the shadows being transparent white, the lights being black and opaque." We must confess to never having met with sensitive gelatine yet, but shall probably do so some day, and although we have seen negatives which fit the description we are "free to 'fess' they were not, in our opinion, likely to produce good prints. We are then given a description of albumenised paper, the method of printing and fixing in "hyposulphate of soda, to dissolve away the discolourable chloride of silver from the patches that the sun could not get at through the glass negative." These prints are not permanent, the reviewer says, and he informs us "the surface of the print is a miserable and muddy compromise between the dull or 'mate' surface beloved of artists, and the brilliant and glossy one," etc. The gelatino-chloride printing-out process is said to be the printing process, and "if it stands the test of time the whole art of photographic printing will therefore be revolutionised."

Further, we are told Liesegang still uses the collodio-chloride process for preparing Aristotype paper, although not twenty lines higher up we are told he and other "Germans" used gelatine. The critic now treats us to a little advanced chemistry, which, for the benefit of our younger readers, we reprint entire with comments:—

"At the outset we thus detect a chemical difference between the new and the old film. In the latter the chloride of silver is deposited on the paper by the decomposing action of common table salt on nitrate of silver. In the new film it is simply held suspended in the liquid gelatine, and applied direct to the paper. But to get fine colour a sensitive organic salt of silver must also be applied. In the old film the albumen forms this in the shape of 'albuminate of silver,' which unfortunately becomes an integral part of the film, and is therefore very hard to wash away in the fixing bath of hyposulphite of soda. Hence the white patches where the light did not strike the albumen film in printing blacken in time. But in the new film the organic silver salt is put on it directly as a citrate or tartrate, which is easily washed away, thus giving the print a better chance of permanence. The sensitive part of the film in the old prints sinks down into the very body of the paper. Hence it is hard to wash, and does not show up the most delicate details of a picture. But in the new gelatino-chloride film the sensitive part is of almost inconceivable tenuity, and carefully kept on the surface by the impermeable backing of barytes or chalk which is between it and the paper. Hence it throws up the minutest and most delicate details of a picture, and is easier to wash free from the colourable residue of silver salt than the old orthodox print, so that it is said to be permanent. But is it? Absolute permanence cannot in our opinion be guaranteed to any print made from a sensitive salt of silver. Gelatino-chloride paper has not yet been tested by time, and all we can say of it is that, while sunlight will destroy the best albumenised print in three months, it does not affect the picture on the gelatino-chloride film in that period."

First we are told it is very difficult to wash away the "albuminate of silver" in the fixing bath of hyposulphite of soda. We were under the impression that this silver salt was decomposed by hypo, but are glad to be corrected by such an authority, and have duly noted that he is wrong. The new film possesses the organic silver salt in the shape of the citrate or tartrate, which is easily washed away. Both the citrate and tartrate are by no means soluble in water; in fact, they may practically be considered insoluble in water. If the writer refers to the washing away in the fixing bath, then nearly all the silver salts used in the printing-out processes have about the same power of being washed away. "Absolute permanence" is, we venture to think, not to be claimed for any process.

"Mr. Woodbury describes three varieties of gelatino-chloride film. . . . There is, however, a fourth not described by Mr. Woodbury, called the 'Ilford Printing-out Paper,' which is little known. It ought to have been mentioned, because it is rather cheaper than the others; but, though it yields fair results, its cheapness will not, we think, tempt those who experiment with it to give it a preference."

In this paragraph the writer at once exhibits his partiality and bias and his ignorance of things photographic. Possibly if there is a paper which is well known, we venture to think it is the new one, and "rather cheaper" hardly expresses the state of the case. Celerotype paper now receives unlimited praise, for the following reasons:—

"The latter is, however, not only the most recent, but the most popular—(1) because it is not, like the other two, of foreign make, (2) because it is tougher and less risky to handle, (3) because it prints more rapidly, (4) because it gives better pictures than the others with poor or weak negatives, though not with dense ones, and lastly (5) because it seems to stand exposure to direct sunlight better."

And we venture to question most strongly points 3, 4, and 5.

We now come to the close of this article, and find that there are here several statements which are at once erroneous.

"Mr. Woodbury seems a trifle undecided as to whether alum should or should not be added to the fixing and toning baths in the new process. In warm weather it is absolutely necessary to harden gelatine films with alum, and the only real objection to it is that it is apt to set sulphur products and sulphurous acid free from the hyposulphite of soda in the fixing solution. It seems to us, however, that Dr. Ehrmann, the celebrated American chemist, has met this objection by letting the alum and hypo-sulphite stand in solution for four days, till the noxious solids settle, when, after filtration, he drives off the sulphurous acid gas by heating to 90 deg. Fahr. In fact, the only combined fixing and toning bath—and everybody is using these baths nowadays for the new process, because they are beautifully clean, and save time and trouble—that is perfectly safe is one made in this way, with the addition of a little chloride of silver—a grain of chloride of gold being of course added for every forty square inches of paper toned and fixed, and the bath *never being used more than once*. Mr. Woodbury, we observe, recommends, like most Englishmen, the addition to the combined baths of sulphocyanide of ammonium, which many American chemists, however, condemn for weighty reasons. Mr. Woodbury's treatise will certainly induce enterprising students of photography to investigate the new process, and those who once take it up will not abandon it to return to any of the 'orthodox' ones so long in vogue."

It is not absolutely necessary to use alum in hot weather, this being dependent solely on the method of preparation of the paper and the toning bath used. Dr. Ehrmann, we are told, gets rid of the difficulty of the decomposition of the hypo by the alum by allowing this mixture to stand four days and heating. It is interesting to note that Herr Lainer, the introducer of the acid fixing bath, has stated that a mixture of alum and hypo solutions deposits sulphur continuously but slowly for over three months. Further, it is not every one who is using the combined fixing and toning bath; there is a strong feeling against it, and although there may be weighty reason against the use of impure sulpho-cyanide, or too much of it, there can be and is no objection to the use of the pure salt.

Finally we must say that our publishers are always grateful for favourable reviews, and we ourselves are pleased to see any work a success in which we have directly or indirectly had a share, but in the present instance we must confess we can only quote the trite remark, "Heaven save us from our friends!"

Letters to the Editor.

THE VIENNA EXHIBITION, 1891.

SIR,—You will remember the announcement that though it was impossible to make invidious distinctions amongst the exhibitors by giving to any the medals first promised, a certificate of honourable mention would be presented to *all* those who received the honour of selection for exhibition at the hands of the artistic committee, and whose pictures were accepted for hanging.

Is it known whether anything further has come of this matter? I, as one of the contributors who were "hung," have long ago received my pictures, but without a single word of comment or thanks from any one in authority at Vienna.

Is the "certificate" likely to be a "work of art" taking so long a time to execute, or is it following the medals and gone into the limbo of things forgotten?

After the flourish of trumpets which heralded the approach of this exhibition, it seems to savour rather of a lack of courtesy at headquarters that so little trouble should be taken to express even thanks to those who responded to their invitation.

Will any other contributors say what their experience has been, and relieve the suspense of yours, etc., EXPECTANS.

* * * *

PROPOSED "SUBJECT" CLUB.

SIR,—In making the following suggestion I may be behind the times, and that which I seek to establish may be already in existence. If so, I should be glad of the Secretary's address.

My idea is that there should be for photographers what is quite common amongst artists of my acquaintance, a "Subject" Club, *i. e.*, that the members should have some subject set each month, and all should give by photography their idea of it; the pictures should be judged by competent men, and the excellencies and defects pointed out.

My idea differs from others, I believe, in the fact that the *subject* being given, *e. g.*, "Danger," "An Old Ballad," "Blind," etc., the imagination is called into play, and those who visit galleries devoted either to paintings or photographs will know how little imagination there is to be seen in the rank and file of pictures at all times.—Yours truly, A. H. BLAKE.

Eton, Windsor.

P.S.—Should any of your readers feel inclined to join in any such enterprise, would they communicate with me at the above address?

* * * *

THE PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN.

SIR,—Mr. Van der Weyde, in your last issue, puts a statement upon me which I did not make, and then calls it "a gross misstatement." I will not reply in like manner, but ask your readers to refer to Mr. Van der Weyde's letter appearing on October 9th, and then say whether my representation that the reason given for resignation was the assumed disqualification of his pictures, is not simply and literally true. Mr. Davison's assertion that the original false statement in one of the daily papers was probably officially inspired, seems to me to be a libel on the officials of the Society which he ought to be prepared to justify.

Mr. H. P. Robinson's letter would have been more convincing had he been able to controvert my statements, instead of occupying space with fables and similes. They prove nothing, although they may suggest and weaken the cause in which they are made to serve in place of argument.

Mr. G. Davison says that his pictures were accepted late on a distinct understanding that they should either be hung without restriction or not hung at all. If he is able to substantiate this statement, and to point out the official who "accepted" (not merely took in at the door or even hung provisionally) his pictures contrary to the regulations drawn up for the general good and acted upon with regard to others, he will do a service.

Mr. Lyddell Sawyers says, "To hang such veterans as Robinson, Gale, or England in any secondary place, so long as they favour us with pictures, would be an act of discourteous ingratitude." I had supposed that the function of a hanging committee and of judges is to estimate pictures according to their intrinsic merit, and that several, at least, of the "veterans" would prefer to stand on that, rather than be put in the position of a favoured clique.

Mr. Sawyer further makes the suggestion (an unworthy one, I think) that the action of the Council was dictated rather by private spleen than by a sense of justice. Let any one look through the list of members of council (who were nearly all present, including Messrs. Robinson and Davison), and then say whether private spleen against these members, or a desire to conciliate and retain them if that could have been done consistently with dignity and justice, is like to have been predominant.

If the Photographic Society of Great Britain has lost something by recent events, it has also gained. The few secessions have been outnumbered by fresh accessions, and the feeling of confidence engendered by the knowledge that there is an executive courageous enough to enforce equality of dealing as against privilege should, in conjunction with the present manifestations of activity in various directions, ensure fresh prosperity, and an enlarged sphere of usefulness to the Society.—Yours, etc.,

W. E. DEBENHAM,

TRAVELS WITH THE CAMERA.

SIR,—The dense black fog which received me in Leeds upon my return from a rapid visit to Germany (I notice that in the previous week only two hours and five minutes' sunshine had been registered at the Philosophical Hall) suggests to me the idea that to some of my whilom countrymen the news of lands where there are objects of interest to photograph, and light enough to get a picture, may not be unwelcome.

Little more than a fortnight ago, I bought a return ticket to Cologne and back by the Great Eastern Railway. I admired the skill and taste with which that company adorned both its carriages and steamers with the admirable photographs of Payne Jennings, the care for passengers' comfort which made even third-class travel on the train between Doncaster and Harwich as convenient as what is called first-class travel in America, the promptness with which, in less than twenty-two hours from leaving Doncaster, I was deposited in Cologne on the Rhine, and the convenience afforded me by the choice of no less than three return routes between Cologne and Rotterdam, and two between Harwich and Leeds (March or London), all for a trifling sum of money. But it is to another matter that I wish to direct the attention of those of your readers who may be led by business or pleasure to use this route in the coming season. Returning from Cologne, I spent a day at the Hotel Herfs in Orefeld, and finding there that by rising early the next morning I could spend three hours at the half-Dutch, half-German town of Cleves, I used the opportunity to visit this home of one of the unfortunate wives of our Henry VIII., and scene of the legend immortalised by the genius of Wagner in his "Lohengrin." If I had had a camera with me, a full day would hardly have sufficed for the picturesque scenes in the streets alone—but it was an interior likely to be altogether overlooked by the casual visitor which I especially wish to recommend to the amateur who may pass that way. It was in a little restaurant in the "Kleiner Markt" called "Zum Kurfürsten," that I saw a ceiling adorned with stucco work of the year 1677, and still in an admirable state of preservation. It is a perfectly unique sample of house decoration, and I have not seen any picture or other record of it in any work on the architecture of the *Niederland*. I endeavoured in vain to purchase photographs of this unique monument of Dutch plastic art, getting one inferior print, while there are fourteen separate subjects for the camera. If any of your readers should follow my advice to visit this restaurant with his camera, I trust he will show his gratitude to me by sending me prints from his negatives.

Another of the few places in Europe which have not been overrun by photographers, and are yet full of studies for camera and pencil, is Transylvania, in South-Eastern Hungary. The chief city is Klausenburg, is accessible in a day's journey from Vienna, and railway travel is cheaper there than in any country that I have visited. Most public libraries contain, I believe, a copy of Boner's "Transylvania, its Products and its People," in which the reader may find some hints of the beautiful scenery and costumes, the picturesque architecture and romantic history of this land beyond the forests; and since the English language is a favourite object of study at the gymnasium there, the English tourist need not fear much difficulty on account of the language.

In 1873, and twice in later years, I made extensive travels in this romantic land, but then I did not use a camera, and regret much that on my necessarily brief visits to Europe I have on longer time to travel so far east.

To those amateurs who contemplate a transatlantic excursion with the camera, I would repeat, from my experience of the past autumn, what I have said in a former letter to the *AMATEUR PHOTOGRAPHER*, that by far the most picturesque route is that via the straits of Belle Isle between Newfoundland and Labrador, to Quebec and Montreal, and thence via Saratoga and the Hudson River to New York. If the tourist has time and money enough to stop at St. John's, and explore Newfoundland and the maritime provinces on the way, so much the better.

On my visit to the British dominion this autumn, I was especially gratified by the courtesy of the officials of the Canada Pacific Railroad at Montreal, and of the Ministry of the Interior at Ottawa. Some of the best lantern slides I possess are copied from negatives of Mr. Deville, the Surveyor-General of Canada, and Mr. Woodruff, his assistant; while the negatives made in the photographic survey of the Canadian National Park, in the Rocky Mountains, are a fine illustration of the applica-

tion of photography to surveying purposes. The enterprise of the Canada Pacific Railroad Co. has brought some of the finest scenery in the world within the limits of a summer holiday, at a very moderate expense.—Yours truly,
Providence, R.I., United States. JOHN FRETWELL.

Photographic Procedure.

By E. J. WALL.

Author of the "Dictionary of Photography."

SECTION III.

EXPOSURE TABLES, PHOTOMETERS, ACTINOMETERS, ETC.

THE following useful tables for calculating the time of exposure, according to A. de la Baume Pluvinel, appeared in a recent number of *Neuheiten*, a monthly periodical issued by Robert Talbot, of Berlin:—For the time of exposure, t , of a photographic plate applies approximately the well-known and easily-proved formula—

$$t = \text{constant} \times \left\{ \frac{\text{Focus}}{\text{Diameter of diaphragm}} \right\}^2$$

in which the constant receives certain values, first empirically determined by Dorval. In this formula are now, however, as one perceives at first sight, several important factors totally disregarded, and it may be therefore desirable, on the ground of the laws of mathematical optics, and with the aid of certain necessary assumptions, to submit the problem to a deeper investigation, and to strive to bring its solution into better harmony with the physical facts.

In a meritorious brochure ("Le Temps de Pose," Paris, 1890, Gauthier Villars), issued recently, the French investigator, De la Baume Pluvinel, made the attempt to determine a formula applicable to any possible case, according to which "the time of exposure"—indeed, any time can be reckoned, which will be required to expose a photographic plate, actually an orthochromatic—so that a correct printing negative will be finally obtained. If actually La Baume Pluvinel's theory and tables of resultant times of exposure have only an illusory precision—which is to be expected from the impossibility of accurate measurement of the different constants which arise—still I think that it will be welcome to the reader to be made acquainted with the results of this theory, without needing to follow the long mathematical calculations of the author, and therefore I briefly recapitulate the principal results and empirical data of La Baume Pluvinel.

However, before the general final formula for the time exposure is given, the units of the factors appearing in it should be explained, or their mathematical expressions be given.

An important factor is the amount—

$$\frac{\log A_1 \cos^4 \alpha_1 - \log A_2 \cos^4 \alpha_2}{A_1 \cos^4 \alpha_1 - A_2 \cos^4 \alpha_2} \times \frac{40m}{p v (1 - e^{-m^2})}$$

This is briefly designated $\frac{1}{E}$.

In which—

e represents the thickness of the gelatino-bromide of silver film ;

m , its absorptive coefficient ;

v , the absorptive coefficient of the film saturated with reduced silver ;

α_1 and α_2 , the angle which the secondary axes of the different illuminated elements of the object form with the principal axis of the objective ;

A_1 and A_2 , the corresponding actinic active quality of light (reckoned for units of time, surface, and distance).

One can now actually, for any single case, approximately reckon the value of $\frac{1}{E}$, with the help of certain assumptions, and on the basis of actinometrical and other measurements. Still, this would be impracticable for practical work ; it is thus better to estimate $\frac{1}{E}$ in a purely experimental way for special requirements, and the different cases which occur in practice, from this to reduce (see the table of the value of $\frac{1}{E}$ below). This also applies to the amount J , which represents the actinic intensity of the illuminating beam of light, and for which one finds a table below :—

For the desired time of exposure, t , results now, according to La Baume Pluvinel's theory—

$$t = \frac{1}{E} \times \frac{1}{J} \times \frac{1}{10} \times \frac{F^2}{d^2} \left\{ \frac{4}{3} \right\} 25 - N \times \left\{ \frac{1}{1 - \frac{F}{D}} \right\}^2$$

In which—

F represents the equivalent focus of the objective ;

D , the distance of the object from the lens, measured along the principal axis ;

d , the working aperture of the lens—with doublets

$d = \frac{P \times d'}{P - l'}$, where P is the equivalent focus of the front lens, d' the diameter of the diaphragm, l' the distance of the centre of the diaphragm from the optical centre of the front lens ;

N , the number of degrees of Warnerke's sensitometer which the plate used shows.

N , with the most sensitive plates, = 25, and varies usually between 16 and 23.

The co-efficient $\left\{ \frac{1}{1 - \frac{F}{D}} \right\}^2$ with landscapes is about 1,

because then D is great ; on the other hand, it comes considerably into account in enlargements, since then D is only small. In the above, it must be noticed that the absorption, as well as the reflection of the lenses of the objective, is not calculated. The same has a mean result of loss of light of about 20 per cent.

VALUE OF $\frac{1}{E}$.

Clouds	0 0005
Sea	0 001
Snow	0 001
Ships on sea	0 003
Glaciers with rocks	0 003
Open landscape (panorama)	0 003
Foliage, with water or white houses	0 005
Foliage only, and near	0 01
Living subjects, portraits, still life, etc. . .	0 01
Reproduction of black lines on white ground	0 02

VALUE OF $\frac{1}{J}$ ACCORDING TO EDER, ABNEY, AND VOGEL.

Direct upright sunlight ; for Paris, 21st June, noon ; also if the sun stands 66 deg. above the horizon	1
Diffused light, bright weather	4
" " sky covered	4 to 10
Under trees	270
In the studio	12
In a room, 1 metre from window	70
Well-lighted church	200

VALUE OF $\frac{1}{J}$ FOR DIRECT SUNLIGHT.

	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.		After-noon.
	1-15	15-31	1-15	15-29	1-15	15-31	1-15	15-30	1-15	15-31	1-15	15-30	
Hour.													Hour.
4	...	...	...	...	...	...	...	...	...	...	...	30	8
4.30	...	...	...	...	...	...	...	...	...	...	30	15	7.30
5	...	...	...	...	...	...	...	...	...	...	14	10	7
5.30	...	...	...	...	...	...	30	21	15	12	8	6	6.30
6	...	...	...	...	...	30	15	12	8	6	5	4	6
6.30	...	...	...	30	15	12	8	6	4	3.5	3	3	5.30
7	...	...	30	15	12	4	6	4	3	2.5	2.3	2	5
7.30	...	30	15	12	6	4	3.5	3	2.5	2	1.8	1.7	4.30
8	30	15	10	6	4	3	2.5	2	1.8	1.7	1.6	1.6	4
8.30	15	12	7	4	3	2	1.8	1.8	1.7	1.6	1.5	1.4	3.30
9	10	6	4	3.5	2.1	1.8	1.7	1.6	1.5	1.4	1.3	1.3	3
9.30	7	5	3	2.5	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	2.30
10	5	4	3	2	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.1	2
10.30	4	3.5	2.5	1.8	1.7	1.5	1.4	1.2	1.1	1.1	1.1	1.1	1.30
11	4	3.5	2.5	1.8	1.7	1.5	1.3	1.2	1.1	1.1	1	1	1
11.30	3.5	3	2.5	1.8	1.6	1.4	1.3	1.2	1.1	1	1	1	12.30
Noon.	3.5	3	2.5	1.8	1.6	1.4	1.2	1.1	1	1	1	1	Noon.
Morn- ing.	15-31	1-15	15-30	1-15	15-31	1-15	15-30	1-15	15-31	1-15	15-31	1-15	
	DECEMBER.		NOVEMBER.		OCTOBER.		SEPTEMBER.		AUGUST.		JULY.		

FACTORS WITH WHICH ONE HAS TO MULTIPLY THE VALUE OF $\frac{1}{J}$ FOR DIFFUSED SKY LIGHT.

	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.		Evening.
	1-15	15-31	1-15	15-29	1-15	15-31	1-15	15-30	1-15	15-31	1-15	15-30	
Hour.													Hour.
4	...	...	...	...	...	...	...	...	...	...	...	7.5	8
4.30	...	...	...	...	...	...	...	...	...	...	7.5	5	7.30
5	...	...	...	...	...	...	...	...	7.5	5	3.7	3.5	7
5.30	...	...	...	...	...	...	...	6.2	3.7	3.2	2.7	2.5	6.30
6	...	...	...	...	...	7.5	4	3.5	3	2.5	2	1.7	6
6.30	...	...	...	...	7.5	3.8	3.3	2.5	2	1.8	1.7	1.6	5.30
7	...	...	...	7.5	3.8	3	2	1.9	1.7	1.7	1.6	1.5	5
7.30	...	7.5	6.2	3.8	3	2	1.8	1.4	1.6	1.5	1.4	1.4	4.30
8	7.5	4	3.5	3	2	1.7	1.6	1.5	1.4	1.4	1.3	1.2	4
8.30	4	3.5	3	2	1.7	1.6	1.5	1.4	1.2	1.2	1.2	1.2	3.30
9	3.5	3	2	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.1	3
9.30	2.5	2	1.8	1.6	1.5	1.4	1.2	1.2	1.1	1.1	1	1	2.30
10	2	1.9	1.7	1.5	1.4	1.2	1.2	1.1	1.1	1	1	1	2
10.30	1.9	1.8	1.6	1.5	1.2	1.2	1.1	1	1	1	1	1	1.30
11	1.8	1.7	1.6	1.4	1.2	1.1	1.1	1	1	1	1	1	1
11.30	1.8	1.7	1.5	1.4	1.2	1.1	1.1	1	1	1	1	1	12.30
Noon.	1.8	1.7	1.5	1.4	1.2	1.1	1.1	1	1	1	1	1	Noon.
Morn- ing.	15-31	1-15	15-30	1-15	15-31	1-15	15-30	1-15	15-31	1-15	15-31	1-15	
	DECEMBER.		NOVEMBER.		OCTOBER.		SEPTEMBER.		AUGUST.		JULY.		

The formula determined for t can approximately be written as follows :

$$t = L \times \frac{1}{10} \times \frac{F^2}{d^2}$$

For this, the values of L , according to Dorval, are :

	SUNLIGHT.		DIFFUSED LIGHT.		CLOUDY.
	Day.	Morning	Day.	Morning & even.	
Panorama and sea views...	1000	100	100	100	100
Panorama with large masses of foliage	100	100	100	100	100
View with bright foreground or white buildings	100	100	100	100	100
View with dark foreground or dark buildings	100	100	100	100	100
Under trees, shady river banks, ravines, etc.	100	100	100	100	100
Living objects, groups, portraits, etc., in the open air	100	100	100	100	100
The same, very near a window or under a roof	100	100	100	100	100
Reproductions, enlargements of photographs, engravings, etc.	100	100	100	100	100

"Day," in Summer, from 9 to 4; in Winter, from 11 to 2.

Having briefly reviewed the commercial exposure meters, actinometers, etc., and stated the objections to their use, it is only fair I should treat the tables on the same plan. All published tables are founded, I presume, on some such results as I have given in a tabular form; that is to say, they are calculated on the experience and record of past years, as with Hurter and Driffield's actinograph, but the same objection which I raised to that instrument must necessarily apply to these tables, namely, that the experience or results obtained either in one year or in one thousand years cannot give us any clue as to what the light will be at any given hour of any given day in the year. But whilst exposure meters, actinometers, and tables are not strictly accurate, there is not the slightest doubt that they one and all are more or less assistance to beginners by giving some idea of the necessary duration of exposure, and will therefore prove useful in forming a nearer estimate than the inexperienced and untutored mind.

Crooke's Radiometer.—Before closing this section it is advisable for me to include a short note on this which has been recommended for estimating photographic exposure by Vidal, Zollner, and Olivier, but it is totally unreliable, as Crookes points out that the number of revolutions are dependent upon the heating and not the chemical power of light; thus he took as his unit 100 as the maximum of action in the infra red; then the number of revolutions for the other rays of the spectrum are as follows:—

Infra red ..	100	Green ..	41
Extreme red ..	85	Blue ..	22
Red ..	73	Indigo ..	8.5
Orange ..	66	Violet ..	6
Yellow ..	57	Extreme violet	5

Decoudun's Photographer's Compass.—This is a small compass with special shifting dial, the handle is pointed direct at the object to be taken when the shifting dial immediately shows the hour of the day at which the sun is directly behind the operator, and thus shining full upon the object.

Every Photographer's own Patent Compass.—This useful little instrument is generally carried by every photographer, and at once indicates the position of any object, and the position of the sun being generally known it is easy to determine at once at what time of the day the most suitable lighting will be obtained; it is also an ordinary watch. The method of using a watch as a compass was given by a correspondent to a weekly paper some time back. Point the hour hand to the sun, and the south is exactly half way between the hour and the figure XII. on the watch. For instance, suppose that it is four o'clock; point the hand indicating IV. to the sun and II. on the watch is due south. Suppose that it is eight o'clock, point the hand indicating VIII. to the sun, and the figure X. on the watch is due south.

Counting the time of Exposure.—Possessors of a watch with a second hand will have no difficulty in counting the duration of a lengthy exposure, but for shorter periods than this some other aid is required. Most modern watches tick five times in a second, occasionally one may be picked up which ticks four to the second; there are also cheap stop-watches on the market which can be obtained from most pawnbrokers, which have an extra hand marking fifths of a second, and which can be stopped or started in one-fifth of a second. The writer has one which he bought new for 12s. 6d., which, although remarkably erratic as a timekeeper, acts well for timing exposures. It has also been suggested to use a bunch of keys or a bullet tied to a string eighteen inches in length, which when set swinging beats

half seconds. But in many cases it is desirable to look at the subject whilst making an exposure, especially when such is of short duration; it then becomes impossible to look at a watch or swinging body at the same time. Therefore the author has for some considerable time practised counting seconds, and does so now, with such accuracy that in three trials against a watch of 5, 10 and 30 seconds the error was only $\frac{1}{4}$, $\frac{3}{4}$, and $\frac{1}{2}$ second respectively. This accuracy can only be obtained by practice, but it soon becomes easy. The writer's method of counting is as follows: Say, for instance, three seconds are required. Then as soon as the cap is removed, count 1, 2, 3, 4; 2, 2, 3, 4; 3, 2, 3, 4. Again we will suppose $1\frac{1}{2}$ seconds is required, 1, 2, 3, 4; 2, 2. It will be seen from this that four are counted to the second, and each second begins with the number which the four when counted will complete.



A Method to Probe Correct Exposure.

BY W. H. ELLIS.

For some time past I have been trying to find out a correct method of proving whether or not a correct exposure has been given to an exposed plate. So far I have come to the conclusion that it is impossible to tell by any method whatever (exposure tables, meters, etc., included) until the plate exposed has been in the developer for a certain length of time; and then this can only be found out when using the ordinary (or plates with similar speed), rapid (or ditto), and the extra or special rapid (or ditto), which have not been exposed for less than one-eighth of a second. There are a few conditions under which this method will only prove satisfactory, namely:—(1) This method will only coincide with plates which have been developed with either the developer given with the plates or a developer of a similar speed in developing; (2) also only with plates which are developed with a freshly mixed developer (not a developer which has been in a bottle for a time, which is sure not to be as strong as a freshly mixed developer); (3) also only with a developer which has been made up exactly as stated on the boxes of plates, in books, pamphlets, etc., or wherever you may obtain your introduction of the developer. (4) This method will not coincide with a developer which is added to during development; (5) nor a developer which has been in the developing dish for half an hour; (6) nor a developer which has developed more than six plates one after the other. In short, this method will only coincide with plates which have been developed in proper, clean, and workmanlike manner. As regards the lifting out of the plates from the developer, this is certain to and does quicken the plates in development; during all my development of plates I only lifted the plates out of the developer twice each plate. I having reckoned on this, I think it will not be doing rightly, if using this method, to do so more times.

The foregoing particulars only refer to plates which are exposed by daylight. I now come to the artificial work. The papers mostly used are bromide (slow and rapid) and Alpha papers; also lantern plates. I might add that ordinary plates require as much time in development as bromide and Alpha papers do if exposed to artificial light. The exposure given in artificial light is all I have so far been able to fully explain. I think it is well known that artificial light exposures require longer time to develop than daylight, so I take it as a fact that the only way to tell whether you have given a correct exposure to your paper and plates which are exposed by artificial light is as follows (the same conditions fit this work as do daylight):—

If in the time in which the paper or plate was exposed to the light there appears to be a slight appearance on the paper or plate of the picture coming, this is a proof this plate or paper was correctly exposed, but if in the time in which it was exposed there appears to be no sign of the picture appearing, this is a proof it was under-exposed, or if the picture appears before the time in which the paper or plate was exposed, this is a proof it was over-exposed. For instance, if a plate or paper was exposed for two and a half minutes, and when developing it, in exactly this time there appears the picture coming, it was correctly exposed; but if there appear signs of the picture before the two and a half minutes are up, the paper or plate is over-exposed, and if after this time, it was under-exposed. This proof I obtained from exposing three pieces of bromide (rapid and slow), four pieces of Alpha, six Ilford lantern plates, and two ordinary plates (Barnet), using all through an average density negative, and I think the above correct.

I now go back to the daylight exposures, which are far more particular. The figures which I have obtained after exposing about forty plates (quarter and half plate sizes) on various subjects, at various intervals, and in various lights, are as follows:—

EXPOSURE.	Seconds and Minutes Developing till the First Signs of the Picture appear.		
	Ordinary.	Rapid.	Special Rapid.
64 to 80 sec. ...	7 to 12 sec.	5 to 8 sec.	3 to 4 sec.
32 " 40 " ...	15 " 20 "	12 " 16 "	8 " 12 "
16 " 20 " ...	30 " 40 "	20 " 30 "	12 " 20 "
8 " 10 " ...	1 min.	45 sec.	30 sec. "
6 " 7 " ...	1½ "	1 min.	45 "
4 " 5 " ...	2 "	1 min. 40 sec.	1½ min.
3½ " 4 " ...	2½ "	2 min.	1½ "
3 sec.	3 "	2½ "	1½ "
2½ "	3½ "	2 min. 50 sec.	2 "
2 "	4 "	3 " 20 "	2 min. 50 sec.
1½ "	4½ "	3 " 40 "	*
1 "	5 "	4 min.	*
½ "	5½ "	4 min. 10 sec.	*
¼ "	6 "	4½ min.	4 min. 50 sec.
1 "	6½ "	5 "	5 " 10 "

P.S.—The above figures are the figures of the time from when the paper or plate is first put in the developer till it is first observed anything is coming on the plate or paper.

The above figures suit the ordinary plates best, the rapid and special rapid plates requiring to be a little further worked out: more so the extra plates, but I have found the rapid plates can be used if three-quarters or thereabouts of the time of the development of the ordinary plates be taken, and the special rapid can be used, I think, if half the time of the development of the ordinary plate be used, but this requires a little more experiment before I can say it is all correct. It will be noticed there are three spaces left in the special rapid column, marked *. These I have not yet settled upon, but the others are, to my best knowledge, correct. The foregoing particulars and instructions are worked up for the very reason to get amateur photographers out of the trouble which so many have now to put up with, about finding out whether or not they have given a correct exposure. I have worked these figures out by my own experience, and do hope every reader of the AMATEUR PHOTOGRAPHER will try it, and find much benefit in using the table. I intend in a short space of time to get out a perfect table of most of the general exposures.



Fallowfield's "Photographic Remembrancer" and Traveller and Photographic Tit Bits for January, comes to hand, as usual, free, and full of novelties, some of them decidedly useful and catchy too.

Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

CHAPTER XVIII.—SHUTTERS.

LOOKING over the advertisement pages of the photographic Annuals lately issued (Christmas, 1892), we find that about fifty varieties of "shutters" are offered for sale by about twenty firms. The prices of these shutters vary from eighteenpence up to three or four guineas. A close study of the lists and catalogues issued by the dealers themselves would largely increase this number; while if we were to further add all the shutters which have been patented, exhibited, introduced and since withdrawn, during the last ten or twelve years, we should arrive at a very surprising total indeed.

But although "shutters are many," yet the principles upon which they depend are few and easily understood; and many shutters differ only in name. We shall endeavour to describe and classify them, and to indicate the good and bad points of each class.

The Ideal Shutter.—No perfect shutter ever has been, nor probably ever will be produced. And yet the amount of human ingenuity which has been, is being, and (doubtless) will be expended upon the subject, is of remarkable extent. It is so easy to invent an "automatic exposur," although in most cases enquiry proves the idea to be either worthless or to have been anticipated.

Let us now consider the points or properties which it is desirable that a shutter should possess.

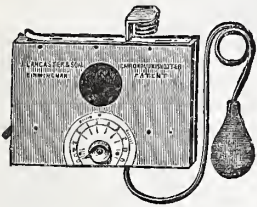
(1.) *The shutter must not shake the camera during the exposure.* Any vibration or jarring of the camera caused by the motion of the shutter during the time for which it permits light to pass through the lens, must, of course, result in a blurred image upon the plate. If the jar is only that caused by the stopping of the shutter after the exposure has been effected, then it is harmless so far as the sharpness of the image is concerned. But it may do injury to the lens by shaking apart or uncementing the distinct pieces of glass of which each achromatic lens is composed; for the Canada balsam by which the glasses are cemented together is, when dry, a brittle substance; and further, by severe and repeated concussions the shutter will in time "knock itself to pieces."

To prevent this jarring, the moving part of the shutter must be as light as possible. Its motion should also be counterbalanced, if possible, by the motion of a second part of equal weight, in the opposite direction. The weaker the springs which set the shutter in motion, the less likelihood is there of vibration of the camera; and a pneumatic release is also less likely to cause shaking than when the exposure is effected by pressure with the fingers.

The gradual, steady, and complete stoppage of the shutter after the exposure has been effected is an important point. It is frequently done by means of steel springs, which act as a brake; but an excellent plan is the "air-brake" of Mr. Newman, in which air in a closed chamber is compressed by the moving shutter, and then escapes through holes of varied sizes. This is an adaptation of an American patent for self-closing doors, which will probably be familiar to many.

(2.) *The shutter should give exposures in accordance with the special work for which it is designed.* The idea that it is possible—or, at all events, expedient—to have one shutter made to give all exposures, from the slowest (say several seconds) up to the most rapid (say the five-hundredth part of a second), is not a good one. We should recommend two, if not three, distinct shutters in preference.

A very desirable shutter, but one which we have never seen advertised, would be one which would give any exposure down from an unlimited length of time to a quarter of a second; being capable of being set to give fixed exposures of three, two, one, one-half, and one-quarter second. The excellent *Chronolux* shutter of Messrs. Lancaster and Son is very much the sort of thing we mean, but is arranged for shorter exposures also.



THE "CHRONOLUX."

The shutter for *ordinary or every-day work* (such as would be found most useful upon hand or detective cameras) should give exposures from the one-quarter to the one-fiftieth of a second. For such subjects as street scenes, yachts sailing, etc., an exposure of the one-thirtieth of a second will, as a rule, be found ample.

The third shutter, which would complete our equipment, would be one designed for such subjects as move at a high speed, and require to be taken "broadside on" and from no great distance. Horse races and steeplechases, divers, bicycle races, athletic sports, the analysis of the movements of animals in rapid motion, the flight of birds, etc., require a shutter capable of giving exposures from the one-hundredth down to the five-hundredth part of a second. Such shutters are not easily obtainable; and unless used with care and with judgment they are soon spoiled. If some maker would place upon the market a shutter having a single speed of the two-hundredth part of a second, sound in construction and good in wear, it would be a boon to many. Not that such a shutter is *often* wanted; but, like the Yankee's revolver, "when you *du* want it, you want it *bad*."

(3) *The shutter should allow as much light as possible to pass through its aperture during the time that it remains open.* The ideal shutter would occupy no time at all in either opening or closing; and this would give the plate the benefit of the full aperture of the shutter during the whole of the exposure. With many shutters just the reverse of this is the case. Half the total time of the exposure is spent in reaching the full aperture, and the other half in closing it again. The proportion which the light *actually* admitted during the whole of the exposure bears to that which *might* be admitted by an ideal shutter, is called the *efficiency* of the shutter.

In the "Lyon" shutter there is an ingenious device by which the shutter remains fully open during the greater part of the exposure. The shutter is opened by a peg moving downwards in a slot; the peg then travels along a horizontal slot, during which time it produces no effect upon the shutter. Lastly, it rises through a second vertical slot, at the same time closing the shutter. In this manner it is estimated that the opening and the closing each occupies the one-tenth of the whole time for which the shutter is open; so that we get the benefit of the full aperture for eight-tenths of the time. The result is a shutter of high efficiency.

(4) *The shutter must permit light to pass equally to all parts of the plate, or, if there be any difference, it should be in favour of the foreground.* When we come to consider the best position for the shutter, it will be seen that shutters working in the diaphragm slot will give the most even illumination of the plate.

(5) *The shutter should be as portable and as simple in construction as possible; and it should not be easily damaged.* It is obvious that if a shutter is to be used in front of the lens (and this is perhaps the position in which we most frequently see a shutter), it is in a favourable position for effecting a leverage upon the camera, and every increase of

an ounce in the weight of the shutter means an increased strain and liability to vibration. Several shutters, possessed of excellent properties, have failed altogether to come into use because of their excessive weight or size.

Complicated shutters are not only expensive, but they, as a rule, easily get out of order. When it is considered how exposed shutters are to spray (when used for marine work), and to injury from dust, grit, sand, accidental blows, etc., it will be seen how desirable it is that all the moving parts of the shutter should be as completely self-contained and covered over as possible.

(6) *The shutter should operate with as little noise and as little visibility as possible.* For work in the studio the noiseless opening and closing of the shutter is a desideratum. In out-of-door work, too, the loud click of many shutters calls attention to what the owner may fondly call a "true detective" camera, and a similar noise generally destroys one's chance of a "second shot" at most animals.

(7) *The shutter must be perfectly light-tight both before and after the exposure*—This is a simple and yet a most important point. Some shutters, and expensive ones too, have a knack of rebounding after the exposure has been effected, and so again admitting a little light to the plate; the result being the production of a double image. Unless the parts of shutters are carefully fitted, carefully blacked, and sufficient overlap allowed, light will find its way, by repeated reflection, round the moving parts of the shutter, and will produce black streaks and blurs upon the plate.

Having now considered the seven principal features which it is desirable that a shutter should possess, we will next study the effect of placing the shutter in different positions with respect to the lens and the plate.

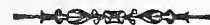


FLEXIBLE METALLIC FILMS ON PAPER.

At the meeting of the Photographic Society of Vienna on November 3rd, we learn from the *Photographische Correspondenz* examples of a new method of preparing decorated and decorative metallic surfaces were shown, and the method of their preparation described. Messrs. Brandweiner and Lautensall, of Vienna, are the inventors of this new application of photography, and the following is Dr. Eder's description of their preparation:—On a highly polished metal plate of copper or brass an image is obtained by any of the usual photographic processes—for instance, by direct printing with bitumen or by transfer. After any requisite retouching, the plate thus prepared is submitted to an etching process, which should be rather a roughening or matting of the plate than the production of a relief. The protecting film is removed and a polished image is seen on a matt ground. Great care must be taken to make the polished and matt places as full of contrast as possible, as the resulting pictures gain considerably in beauty.

As is well known, an electrolytic deposit very exactly assumes the same character as the surface on which it is deposited. The metal plate is now treated with a preparation which does not alter the character of the surface in any way, and which does not present any obstacle to the electric current. A deposit of some metal is now electrically produced. When using the nobler metals, like gold and silver, only an extremely thin film is required, about $\frac{1}{1000}$ mm. ($= \frac{1}{21000}$ inch, Eng.), and the necessary strength obtained by a deposition of a cheaper metal, such as copper.

A sheet of paper, card, leather, linen, etc., is now made to adhere, and on drying the edges are filed off. If the insulation was perfect, the thin metal deposit can be very easily stripped from the plate, which is again ready for a duplication of the pictures.



The "Photographic News" has been remodelled, and is now published by Messrs. Alexander and Shephard, of 21 and 22, Fournival Street, Holborn, E.C. Mr. T. C. Hepworth, F.C.S., is to be congratulated upon the marked improvement in contents and general appearance.

PYROCATECHIN DEVELOPER FOR BROWN TONES.

DR. EDER and Herr Valenta, in a recent number of the *Photographische Correspondenz*, published a report on the use of pyrocatechin or pyrocatechin for developing lantern plates. The authors remark that this reducing agent is, as is well known, very suitable for developing positives. When used in conjunction with potash or soda the image is of a fine brown colour, whilst the addition of sulphite of sodium gives a beautiful greyish-black deposit. In neither case is there any fear of staining of the film.

The solutions recommended are:

(A)				
Potassium carbonate	..	..	..	1 part.
Distilled water	..	..	..	10 parts.

(B)				
Pyrocatechin	..	..	..	1 part.
Distilled water	..	..	..	50 parts.

If very soft and delicate results are desired, mix for use:

Solution A	..	..	..	20 parts.
Solution B	..	..	..	3 "
Water	..	..	..	60 "

The exposure must be somewhat longer than with pyro, and the developer acts more slowly. When development is complete, the plate should be washed and fixed in the ordinary hypo; if the acid fixing bath is used, the colour of the image becomes more yellowish or black.

If more vigorous and contrasted positives are wanted, the exposure should be cut short, and more pyrocatechin added to the developer.

Solution A	..	..	..	20 parts.
Solution B	..	..	..	10 "
Water	..	..	..	60 "

Bromide is rarely necessary, but, if used, acts very powerfully. The developer does not keep long when once used.

A New Photographic Lens.—In the course of his recent paper before the Camera Club, Mr. Thomas R. Dallmeyer said: The object he had in view in the construction of the lens was the production of large primary images of sufficient brilliancy to be of practical value in instantaneous photography without the necessity of employing cumbersome apparatus. Hitherto the only two methods by which the production of large images was made possible were long focus positive ordinary lenses, and the production of the primary image by a positive lens and placing a secondary magnifier behind the plane of the primary image. The objection to the first named method is its unwieldiness, and the second is rendered useless for photographic work, owing to the great loss of light occasioned. The new lens was described as being composed of two elements and the image given by it as primary and inverted. The anterior element is a positive lens of large aperture and short focus, the posterior lens is a negative element of a fractional portion of the focal length of the anterior positive; and in estimating the rapidity or intensity, the shorter the focus of the posterior lens as compared with that of the anterior lens, the greater is the size of image for a given extension of camera. The main object of the invention has been to throw the nodal point from which the focus is actually measured to any desired distance into space in front of the lens itself, thus attaining a large image without the aid of a bulky apparatus. It was immaterial what position might be chosen for the plane upon which the image is to be received; it might be either in close proximity to the posterior lens or removed to any distance whatever farther away. It is essential, however, for correct focusing that the exact distance between the two elements be given. It is evident that the larger the focus of the positive elements in the construction, the greater would have to be the separation between the two elements for near or distant planes. There is thus no limit to the size of the image that can be obtained, slight adjustment in the separation of the two elements producing the correct focus upon the screen—be it near or distant from the lens itself—but it must be borne in mind that the greater the separation between the focussing screen and the lens, the less is the rapidity of the combination. Mr. Dallmeyer during the course of his lecture showed some remarkable specimens of work done by the lens. One of the moon showing the mountains distinctly, and others of sheep and horses. One deserving of special mention was the comparison of the size of the images produced by an ordinary rectilinear lens of twenty inches focus and another with a new lens of about the same bulk showed the objects over five times in size, in other words equal to the performance of a lens of a hundred inches in focal length.

Reviews.

Photographischer Almanach und Kalendar für das Jahr, 1892.

Published by Ed. Liesegang, Dusseldorf. Price 1s.

This little work, which is similar in character to the well-known almanacs of our English photographic papers, is composed of as good an *olla podrida* as usual, containing articles from the pens of various writers and experts in the German photographic world, the best article being one by V. Schumann. The illustrations are two process block prints and a colotype.

Rapport Général de la Commission Permanente nommée par le Congrès International de Photographie. Published by Gauthier-Villars et Fils, 55, Quai des Grands Augustins, Paris.

M. Pector, the Secretary of the Permanent Commission, has forwarded us a copy of the above publication, which contains the results arrived at by the Congress at Paris in 1889, and also the papers by experts in the different subjects, and the final conclusions arrived at by the Congress of last year.

The Practical Photographer. Edited by H. Snowden Ward (Bradford: Percy Lund and Co.)

The publishers have kindly sent us a bound volume of this very useful monthly journal; issued ostensibly for the benefit of professional photographers, by whom it is highly appreciated. There is in its pages much to interest and instruct amateur workers. We heartily commend the *P. P.*, as it is familiarly called, to their notice, and feel sure they will be delighted with the bright writing and valuable information it contains.

The American Annual of Photography and Photographic Times Almanac for 1892. Published by Hampton, Judd, and Co., 17, Farringdon Street, E.C. Price 2s.

Our Transatlantic visitor comes to hand, as usual, laden with good reading, and the only regret one has is that it is not arranged in sectional form, so as to allow one to immediately turn to any particular subject. The illustrations are quite as numerous as in past years, and comprise a pleasing photogravure entitled "Hesitation," two collotypes, and twenty-two process blocks. It would hardly be fair for us to signalise any special articles as the best amongst so many good ones, but those by the English writers C. H. Bothamley, W. K. Burton, A. R. Dresser, W. J. Harrison, A. Henderson, F. C. Lambert, W. Lang, jun., H. P. Robinson, J. Traill Taylor, are well up to the standard of the American writers.

Lantern Slides: How to Make Them. By A. R. Dresser (2nd edit.). Published by the Fry Manufacturing Company, 5, Chandos Street, Charing Cross, W.C. Price 6d.

We have already noticed the first edition of this little manual, and it speaks well for its usefulness that a second edition has been called for. It may be possible to write a larger and more comprehensive work, but as a practical guide, written by a practical man, it cannot be beaten. Mr. Dresser tells us what we want to know, and tells us simply and plainly, and that this is recognised by lantern-slide makers, present and prospective, is obvious when we hear that the second edition consists of 13,000, and that 10,000 have already been sold.

Apparatus.

THE "PROFESSIONAL" BACKING PAPERS.

ALL practical workers know the difficulty of preparing a satisfactory backing for dry plates as a preventative for halation, and if lampblack is used the messiness and probable chances of damaging the film. Messrs. Percy Lund and Co., of Bradford, have forwarded to us a sample of their "Professional" backing papers, which merely require damping on one side and pressing into contact with the glass side of the plate. A dozen plates can easily be backed by the aid of these papers in less than one minute, and they will be found convenient and useful by all who value interiors and landscapes free from halation.

"Photographs of the Year."—Some very good process blocks of the pictures in this successful publication appear in the *Pall Mall Budget* for 31st ult., accompanied by a few flattering words by the Editor.

Quarterly Examinations in Photography.

Question 38.—Give a list of the works you consider most useful for an amateur.

ANSWER.—The following is a complete list compiled from the answers of competitors:—

Abney's Instruction in Photography.
 " Treatise on Photography.
 " Photography with Emulsions.
 Beginners' Guide to Photography.
 Burton's Modern Photography.
 Chapman Jones' Science and Practice of Photography.
 Clark's Platinum Toning.
 " Development.
 Dallmeyer's Choice and Use of Lenses.
 Gotz' Tables of Conjugate Foci.
 Harrison's Photography for All.
 Hepworth's Amateur Photography.
 " Book of the Lantern.

Indispensable Handbook to the Lantern.
 Johnson's Art of Retouching.
 Leaper's Experimental Photography.
 Marion's Practical Guide to Photography.
 Robinson's Pictorial Effect in Photography.
 Robinson's Picture Making by Photography.
 Robinson's Letters on Landscape Photography.
 Robinson's Art Photography.
 Sawyer's A B C Guide to the Carbon Process.
 Wall's Dictionary of Photography.

Question 39.—State your method of exposing and developing a plate on a snow scene. Send an example of your work.

ANSWER.—The best day to secure for taking a snow scene is one where a strong diffused light is given off by a grey wintry sky; bright sunlight is, from a photographic point of view, undesirable. It must be remembered that a large expanse of snow reflects so much light that the exposure actually necessary is considerably less than would be required for the same view if the snow were absent.

It is impossible to give a fixed rule with regard to the exposure, but in a good diffused light the time given need not be more than one-third or one-half of the usual exposure for the time of the year. But although the time mentioned is actually sufficient, the resulting negative will be somewhat hard.

To prevent this, it is best to give a very full exposure, or even to over-expose, so that by taking special precautions during development a softer picture may be obtained. But the exposure, though full, should not be sufficient to produce what is called an "over-exposed" negative.

The best light is generally in the morning, from 10 to 12 o'clock; the afternoon light is usually too dull and heavy for satisfactory work.

Slow plates and a comparatively small stop should be used.

The development of snow scenes requires to be very carefully managed to obtain the best results. If a very full exposure has been given, as above recommended, the developer should contain about half the pyro and bromide prescribed for the full normal developer for the plates used, and only about a quarter the alkali; this will bring out an image which, though weak, is full of soft detail. After this has been obtained, the exact reverse of the process must be adopted; the old developer should be thrown away, and one with a very full allowance of pyro and the normal amount of alkali and bromide poured on, and the development continued till sufficient density is obtained. This will take a long time, but the trouble must not be grudged, and the result will be a negative which shows all the delicate gradation possessed even by white snow, with sufficient density to yield brilliant prints. THEO.

QUESTIONS.

1.—What are stops, and how do you find the ratio aperture of the same?

2.—What are the relative exposures with lenses of $4\frac{1}{2}$, $8\frac{1}{2}$, $10\frac{1}{2}$, and 15 in. focus, working with diaphragms of half an inch aperture?

3.—What rapidity of plate would you choose for landscapes, seascapes, and portraiture? Give your reasons.

Latest Day for Answers, January 18th.

RULES.

1. Answers must be received on the date stated each week in the AMATEUR PHOTOGRAPHER.

2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A *nom de plume* may be used, and must follow every answer, and be affixed to every specimen of practical work.

4. Answers are not limited in length, but preference will be given to concise answers without unnecessary amplification.

5. Those desirous of competing must apply to have their names entered. As these examinations are intended to encourage the study of the theory and practice of photography, authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

6. Past successful candidates will not be allowed to compete.

NOTE.—No information of any kind will be given to competitors, and nothing but the answers must be included for the examiners. All other communications must be addressed to the Editor.

Marks will be given for all answers, and, when possible, the best three answers will be published. The answer will not be published till the week following receipt of the same, and the examiners criticise each answer sent in, and when no satisfactory answer is received, will supply one. Three prizes will be awarded at the end of each quarter. (Full syllabus on application.)

All communications to be addressed:—"EXAMINATION DEPARTMENT," AMATEUR PHOTOGRAPHER, 1, CREED LANE, LONDON, E.C.

Exhibitions.

EXHIBITION AT THE CAMERA CLUB.

THE eighth of the series of the "One Man" exhibitions at the Camera Club was formally opened to the public on the 4th inst., and will be on view for about six weeks.

Mr. J. Pattison Gibson, of Hexham, who is the artist providing the pictures, gives in the "Camera Club Journal" a few particulars of his working and other details, in response to an invitation from Mr. G. Davison, the Hon. Secretary. By a curious coincidence Mr. Gibson was fifty-four years of age on the same day as the exhibition of his pictures was opened. Frank Howard's "Sketcher's Manual" and Turner's "Liber Studiorum" he states to have been the text-books he has relied on. When twelve years old he was sent to the School of Art in Newcastle, and studied for two years under the late W. B. Scott. His first impressions of photography were received from a dancing-master, who practised daguerreotypy, and his first practical experience of the wet collodion process took place in a garret in Newcastle about thirty-five years ago. Enthusiasm for the new process induced the purchase of a thirty-shilling set, and the first sitter was a cobbler "who lived in our back-yard."

Entering upon the business commercially, Mr. Gibson states "In these days there was little competition, and profits were large, and I soon had a flourishing portrait business." Landscape work was then commenced, and in 1871, "when the rage for retouching commenced, I gave up portrait work entirely, preferring to throw up the business rather than join in the retouching mania." After this dropping of the pursuit, Mr. Gibson seems to have printed in a desultory manner from his landscape negatives, but did little or no work till gelatine plates came into use.

In 1881 he gained a bronze medal at an exhibition at Newcastle in a landscape class, F. M. Sutcliffe also taking his first bronze in the same class. "Since that time," he says, "I have been a frequent exhibitor at home and abroad, my subjects being chiefly pure landscape, taken from the river and moorland scenery of my own country, of which I am passionately fond, and with which my photographic experiences and sporting expeditions render me tolerably familiar." This is Mr. Gibson's description of this work, and there can be no truer description of his pictures given. We have not any grand and striking pictures, merely the transcript of a lover of nature, of the river and moor, which appeal alike to the artist and nature lover.

Mr. Gibson's notes on his method of working are too good to miss, and we extract this verbatim from the "Camera Club Journal":—

"Few photographers commence the study of river scenery in a proper fashion, hence the numberless failures we see on the walls of our photo. exhibitions. An artist knows that the painting of water means the painting of its reflections, but few photographers recognise this truth, and give us for water what may be representations of ice, sand, or mud, but which do not even remotely suggest water. In regard to my methods of working, I have no special nostrums or wonderful processes to divulge. When possible I prefer to use long-focus lenses for landscape, reserving short-focus lenses for architectural work and interiors in cramped situations. In glens and deep ravines I find an 8-inch focus single lens very useful in working whole-plate sizes. I use Ilford plates, on account of their great uniformity and freedom from blemishes. To get softness and atmospheric effect I give very long exposures, and prefer working as much as possible against the light to secure broad masses of shadows, using always backed plates to prevent halation. In inland landscape work it is seldom that in large pictures suitable clouds can be secured in the same negative, but when I see a suitable cloud over the landscape on which I am at work, I use every means I know of to secure it, shading the sky during exposure, restraining it during development, and reducing it carefully after fixing, and finally, if all these means being used it is still too dense, I shade the landscape portion during printing to allow the clouds to be more deeply printed; most of my pictures, however, have skies printed in from separate negatives, and although I have many hundreds of cloud negatives I have kept an exhibition landscape as long as three years unprinted from until I could secure a suitable sky for it. I never lose an opportunity of adding a good sky to my stock, and on one occasion got one at twenty minutes past eleven at night. Many I have got in the early morning when camping out at the seaside with my battalion, the 1st V.B. Northumberland Fusiliers, in which I have served for thirty-two years, and in which I hold the rank of Major. I am glad to see that my friend Sutcliffe, in spite of what he

says in a recent article on 'Photography,' against clouds printed in from a separate negative, fully recognises their value in one of his medal set of landscapes at present being exhibited at Leeds, illustrating most forcibly the special point where the use of a cloud negative comes in, viz., in supplying high lights to a landscape which contains none (excepting, of course, the blank whiteness). He shows there how a deep grey landscape may have great power and vigour given to it by printing in a sky similar in tone but having one small break of strong light in it."

Coming to the pictures themselves, we find there are not very many, only just over fifty in all, and that almost every one partakes of that distinctive character of river and moorland scenery. If we can pick out any as more pleasing than the others, we think we may specially point to "The Thaw," which many of our readers will recognize as having been exhibited this year at Pall Mall, and reproduced in "Photographs of the Year," in which we get a fine idea of the usual accompaniment of the thaw, namely, slush. By far the most noticeable feature of the whole exhibit is the number of mist effects, and "Twilight," "The Woody Banks of the Tyne," "Autumn Haze," "Fair flows the River, smoothly gliding on," "Early December Morning," "Summer Haze," "Evening on the Allen," are particularly conspicuous in this respect, the latter especially, as the haze is accentuated by the presence of two flying birds, which struck us as like the proverbial bird which so camouflages a pinhole, etc., in the film. Of such pictures as "Weary," "Under the Haycock fast Asleep" we need not speak; everyone knows them and their excellence.

Most of the pictures, in fact nearly all, are silver prints and good ones too, and those of our readers who have a spare hour during the next six weeks, we should strongly advise to call at the Camera Club and see this exhibit. Many of our competitors might with advantage take a lesson from the pictures there shown, both in technique and artistic skill.

INDUSTRIAL EXHIBITION AT THE POLYTECHNIC.

In connection with the Industrial Exhibition, promoted by members or students, at the Polytechnic there is a small show of photographs which we have visited this week. We cannot say that there is a preponderance of excellent work, in fact, one or two frames and prints would certainly not have been missed had they been struck off the list altogether. The most striking pictures are those by Shapoor N. Bhedwar, which are neither numbered nor catalogued, "Granny's Comforts," "The Tambourine," and "Her First Love Letter." 367, "The Old Village, Shanklin," S. J. Beckett, is good, and 368, "Helping Mother," by A. H. Blake, is a clever little study. 374, by H. Gear, are all good so far as the silver prints go, and F. W. Jackson's set of "Thames Studies," No. 380, are fairly good work, the best being "Richmond." Miss Lucy M. Hare has some lantern slides of very unequal merit, the best being decidedly "Pull's Ferry," "Norwich Cathedral," "Sewardstone, near Chingford," and "Cottages, Pixholme." Miss Hare is evidently afraid of getting too much density, and if this were corrected and a rather warmer colour obtained, the work would be far more pleasing, as considerable artistic taste is shown, but the technique is somewhat weak.



The Richmond Camera Club will hold a descriptive exhibition of lantern slides on the 15th inst., at the College Hall, Richmond.

"The Vegetarian," which is the organ of those particularly affecting the diet of no meat, has been sent us, and is, we should think, of value to the particular circle it appeals to.

The Fry Manufacturing Company, of No. 5, Chandos Street, Charing Cross, W.C., have found their Friday evening demonstrations of such value to themselves, and so much appreciated by their customers, that they have instituted a third series, commencing on the 15th inst. We append the complete list, from which our readers will see that such well-known experts as Mr. A. R. Dresser and W. I. Chadwick are to treat of their special subjects:—Jan. 15th, "A Simple Method of Bromide Enlarging by Artificial Light;" Jan. 22nd, "Lantern Slides, and how to Make them" by Mr. A. R. Dresser; Jan. 29th, "Roughest Naturalistic Bromide Paper and Uranium Toning;" Feb. 5th, "Stereoscopic Photography," by W. I. Chadwick; Feb. 12th, "A Simple Method of Bromide Enlarging by Artificial Light;" Feb. 26th, "Roughest Naturalistic Bromide Paper and Uranium Toning," and March 11th and 25th, "Griffiths' Hand-Cameras and Film Photography." There is no charge for admission to these lectures, and tickets may be obtained by sending a stamped directed envelope, or by personal application at Chandos Street.

Societies' Meetings.

Camera Club.—On Thursday December 31st, Mr. T. M. Brownrigg exhibited a collection of his slides, including scenes in London, cathedral interiors, and landscapes. Amongst the latter, which were mostly from hand-camera negatives, were some beautiful pictures of subjects taken on the Wey and around Guildford. Mr. Brownrigg gave as usual the most entertaining and amusing description with his pictures. Other slides were shown the same evening by Messrs. Frand, Howard, Williams, Howlett, Patterson, Burchett and Lieut-Col. Gale.

Cheltenham.—On December 22nd General F. Dawson and Colonel H. M. Saunders gave a demonstration of enlarging and reducing by limelight, working with Mr. Hughes' Bijou half-plate enlarging lantern, kindly lent for the purpose by the maker. The above gentlemen pointed out that as far as they had been able to compare the Pamphengos lamp supplied with the instrument, with blow-through jet, the latter had about eight times greater intensity. The chief object the demonstrators had in view was to show that with no other apparatus than Hughes' Patent Rectangular Condenser and a small camera, reductions from half and quarter plate negatives could be made with ease and certainty, and without daylight, the ordinary writing table being used and with an exposure of from four to ten seconds according to the density of negative. A negative was selected having considerable density in the middle, and with rather weak marginal definition; the exposure was judged to be eight seconds with blow-through jet and Thomas' lantern plate, developed with 3 gr. quinol, 3 gr. hydrate soda, and $\frac{1}{2}$ grain bromide. The exposure was found to be correct. The advantages of this system were pointed out to be, first the compactness of the apparatus by using the Rectangular Condenser; this was the same size as an ordinary half-plate or $6\frac{1}{2}$ by $4\frac{1}{4}$. Nothing is needed but the condenser, fitted up as anyone used to photographic manipulation can readily make for himself. The negative is placed close to the condenser, the small camera fixed at proper height and at proper distance from the negative, and the condenser then properly illuminated, which is seen by the ground-glass of the small camera showing a clear and shadowless light. The negative is then inserted in its carrier and the exposure made; the small camera is placed in position roughly by measurement, according to the scale of enlargements and reductions in any book of reference, and the fine adjustment made by the rack of the camera; the full $f/8$ opening of the lens was used, of rapid rectilinear class, six inches equivalent focus. An enlargement with the Bijou apparatus was then made, with the full opening of the lens supplied, from half-plate to 15 by 12, the exposure being modified by shielding those portions requiring it, and prolonging the exposure on other portions; the negative was a very trying one, and was selected for that reason. An exposure of eighty seconds (about) over the whole picture, extending to two minutes for some rather hard water from a mill race was sufficient; any ordinary negative not requiring shielding would require about 60 to 80 seconds. The development was with Thomas Brothers' single solution, quinol developer, used weak about 1 dr. to 12 dr. water, which developed the enlargement satisfactorily and with a good colour.

Croydon.—The fortnightly meeting was held on the 4th inst., the President in the chair. He announced that, in consequence of Mr. Charles Hussey being laid up with influenza, the paper which was to have been read by that gentleman was postponed. However, Mr. B. Gay Wilkinson had, at the eleventh hour, consented to fill the gap. The subject chosen was "Platinum Printing," which the lecturer fully explained. Inasmuch as Mr. Wilkinson has achieved such signal success, mainly through the intermediary of platinotypes, his remarks and manipulations were naturally carefully followed. One point was particularly noticeable, i.e., the flatness—in some instances, thinness—of the negatives (which were in each case shown) printed from. The current idea is that a somewhat plucky negative is a *sine qua non*, which seems to be a mistaken impression. At the same time as Mr. Wilkinson's negatives were developed with pyro ammonia, they have a greater actinic range than is at first sight apparent. The above was supplemented by a series of about forty of the lecturer's lantern slides, which were thrown on the screen by Mr. Hirst. Most of these elicited warm marks of approval, especially such celebrated subjects as "The Shrimper," "Sand Dunes," etc. Mr. Wilkinson interspersed many instructive comments and chatty anecdotes as his views were being shown. The negatives were all taken on Wratten's plates, the lantern plates used being Mawson's. During the evening the following gentlemen were chosen to form the nucleus of the Exhibition Committee—Messrs. White, Goddard, Isaacs, Maclean, Sargeant, and Holland. The next meeting will be on the 18th—lantern night, member's slides. The annual meeting will be held on Monday, Feb. 1st.

Greenock.—An exhibition will be held at Museum Hall, Kelly Street, from 5th to 9th inst., with exhibition of lantern slides by Messrs. Wm. Lang, Chas. Reid, R. H. Elder, J. W. McCall, T. N. Armstrong.

Leeds.—The annual meeting of this society was held on the 21st ult., Mr. Godfrey Bingley, President, in the chair. The following were elected members of the committee for 1892:—Messrs. Godfrey Bingley, W. A. M. Brown, Herbert Denison, E. H. Jacobs, M.A., M.D., A. E. Nichols, Rev. E. S. Palmer, Robert Steele, T. W. Thornton, J. H. Walker, and S. A. Warburton. The thanks of the society were given to Messrs. Butterworth, Rodwell, Thornton, and Warburton for the long and valuable services they had rendered to the society. The officers for 1892 are as follows:—President, E. H. Jacobs, M.A., M.D.; Vice-Presidents, Godfrey Bingley and S. A. Warburton; Hon. Secretary, Herbert Denison; Assistant Hon. Secretary, Robert Steele; Hon. Treasurer, T. W. Thornton; Hon. Librarian, W. A. M. Brown; Hon. Lanternist, J. H. Walker.

Photographic Society of Great Britain.—The first of the series of free lectures inaugurated by the above Society was delivered to a numerous audience at 50, Great Russell Street, on Tuesday evening. The lecturer, Mr. Thos. Bolas, F.I.C., F.C.S., treated the subject of "The Relation of Photography to the Industrial Arts" from a somewhat philosophical point of view. He started with an admirable definition of the term "art," and laid down as clearly as possible the distinctions between fine art and industrial art, proceeding afterwards to urge photographic experimenters to investigate the underlying principles of photography rather than to try to obtain results of immediate commercial value. He warned would-be investigators that in the present state of society they must not look for state support while carrying on their researches, and must not in the majority of cases expect even the fame that falls to the share of the man who invents, or more often only exploits, an article of immediate useful application. This was admirably illustrated by the history of the modern gelatine dry plate, now universally used by photographers. As early as 1861 the advantages of gelatine as a vehicle for the sensitive material were shown from a scientific point of view by a French savant, but no practical result was placed before the world. The subject was further dealt with by two well-known English photographic chemists, who threw more light on the reactions involved—still, however, without working out the process in a form which would be of commercial value. When at last another worker succeeded in doing this, he was rewarded not only by a medal, but was really regarded by photographers at large as the actual inventor of gelatine emulsions. A short but pointed discussion then ensued, the majority of the speakers urging the necessity of state support for independent and scientific investigations, the difficulties of applying funds voted for such purposes being recognised and discussed. The proceedings terminated with a hearty vote of thanks to the lecturer. The future lectures of the series will take place on January 19th and February 2nd. January 19th, Mr. Chapman Jones, on "Distortion of Outline in Photography." February 2nd, Professor R. Meldola, F.R.S., on "Photography as a Branch of Technology."

North London.—On 5th inst., Mr. J. Traill Taylor in the chair, a circular from the Photographic Society of Great Britain was laid before the society, and Mr. A. Mackie was appointed a delegate to represent the society on the Affiliation Committee. The evening being occupied as a technical night, several members brought objects of interest, among them Mr. A. E. Smith, who showed some very successful carbon prints, and also some negatives of electric sparks. Mr. Coventon asked the solubility of carbonate of lithium, and it was stated on the authority of Mr. Cowan to be four grains to the ounce. Mr. A. E. Smith asked if Dallmeyer's new lens would be suitable for copying. Mr. Mackie pointed out that the field would be too small for practical use. Mr. Grover showed some bromide prints toned by Mr. Weir Brown's process. The prints had been developed by ferrous oxalate, and owing to insufficient clearing, were rapidly yellowing in the whites. It was suggested that the reason why hydroquinone was recommended in this process was probably owing to the difficulty of thoroughly removing the iron salts. Mr. Coventon brought an old stereoscopic shutter on the roller-blind principle, bearing Dallmeyer's name, and believed to be of the date of about 1861. Mr. Parfitt mentioned that Mr. Beard had made for him a safety apparatus for preventing explosions in pressure gauges, the entrance to the gauges being closed by a screw having a slight passage in the threads, preventing any sudden pressure. Mr. Grover stated that the principle had been adopted before in a well-known water valve, which was now superseded. Mr. Grover described a series of experiments which he had made to produce explosions by pressure of oxygen from a cylinder; a number of different substances, such as iron, steel, and brass fittings, as also scraps of leather, and a few drops of oil; the result being that with the leather, as well as with the oil, there was a violent explosion, sufficient to have destroyed any gauge which might have been attached. The remainder of the meeting was filled up with general conversation on topics of photographic interest, and the mutual interchange of experiences in various departments of photographic work. The next meeting will be held on January 19th, when Mr. E. Clifton will introduce the subject of "The Dark-Room." Visitors are invited.

Richmond.—Friday the 1st inst., lantern night, Mr. Cembrano presiding. Slides were shown by Messrs. Ardaseer, Behan, Bickerton sen. and jun., Cembrano, Davis, Ennis, Faulkner, Hunter, Kelcey, Perry, Ramsay, and Such.

Shropshire.—A special meeting was held on the 29th ult., Mr. W. Burson in the chair. It was decided to arrange a smoking concert in connection with a display of lantern-slides, at the Lion Hotel early in January. Mr. Irwin projected on the screen a series of American slides, "Illustrated Boston;" also a series of Woodbury slides, the latter being kindly lent by Mr. Marshall, Column House.

Tynside.—The usual meeting was held on the 15th inst., the President (J. F. McKie, Esq.) in the chair. A paper was read on "Old and New Developers," showing what the separate ingredients in a developer were expected to do. In the discussion which followed, the President said that he thought that the new developers were like photographic delicacies, but when we want something to do good steady work we fall back on pyro-ammonia, which was the developer generally adopted in this country. A discussion followed on lenses which were used to shorten or lengthen the focal length of existing lenses.

The Lantern Society's meetings for this month are on January 11th, when Commander C. E. Gladstone, R.N., will lecture on "Westminster Abbey;" and on January 25th, when Mr. C. F. Budenberg, of the firm of Schäffer and Budenberg, will lecture on "Pressure Gauges."

The "Owngood" Rocking Developing Dish is the latest introduction of Messrs. S. J. Levi and Co., of Farringdon Road, who only supply wholesale; the dishes are made of porcelain and xylonite, and are provided with a half marble shape knob in the centre underneath the dish, so that a rocking motion is easily procured. The special advantages claimed by the makers are:—(a) Easily rocked without lifting up, this advantage for large size dishes being invaluable. (b) Developer will not spill, as it does when a dish is lifted up and rocked in semi-darkness, the motion allowed by knob only being sufficient for requirement. (c) Extra cost simply nominal.

Camera Club Fixtures.—Jan. 11th, elementary lecture (No. 5, "Exposure," by Mr. Lionel Clark; Jan. 14th, Mr. J. Howson, on "The Pros and Cons of Chloride Printing;" Jan. 18th, evening (for trial of slides; Jan. 21st, Mr. A. Maskell, "The Rendering of Quick Movement by Photography; Express Trains, Action of Animals, Movement of Waves and Clouds; Jan. 25th, elementary lecture No. 6, "Silver Printing," by V. A. Corbould; Jan. 28th, lantern evening, series of slides by Lt.-Col. Gale, and other slides; Feb. 4th, "Further Improvements in Platinotype," by Mr. W. Willis.

"Topical Rhymes" are hardly what we expect to see in the *British Journal of Photography*, but the following is so good that we cannot refrain from giving it. We need not say that it refers to the P.S.G.B. incident:—

"Oh, please, Mr. Editor, stop it;
We're sick of the subject, so drop it,
And each letter you get from this quarrelsome set,
In the waste-paper basket please flop it."

Ives' Colour Photography.—A large audience of ladies and gentlemen which crowded the hall of the Franklin Institute, Philadelphia, U.S.A., heard a most interesting lecture by Mr. Wm. Jennings, on the beauties and wonders of the Yellowstone region, and witnessed, thrown upon a screen, a fine collection of photographic views, in which Mr. Frederick E. Ives successfully reproduced the colours of nature. On August 9th last Mr. Ives and Mr. Jennings started from the Broad Street Station of the Pennsylvania Railroad, fully equipped with cameras and kodaks for a four-thousand mile journey, and they succeeded in capturing views of some of the grandest scenery in the country. Mr. Ives, who was introduced by Professor Houston, said the greater portion of the illustrations shown were "snap-shots" made by Mr. Jennings, and the pictures, he said, would do credit to the best photography. This assertion was strongly borne out by the enthusiasm of the appreciative audience. Mr. Ives also explained that he had remedied certain defects in his colour camera, and he had been so successful in obtaining open landscapes and other views as to convince former sceptics of the possibility of making photographs in the colours of nature. The limelight used that evening, he said, was not powerful enough to bring out the sunlight illumination, but the effect produced was intermediate between moonlight and sunlight. The occasion, he said, was the first in the world in which an attempt was made to illustrate a lecture with photographic pictures, in the natural colours, and before the close of the season he meant to demonstrate the success attained with a greater variety of subjects. Mr. Jennings then followed with the story of the trip, and told it in such a vivid manner as to fairly carry his hearers along with him. Some of the views shown were extremely beautiful, and when the last picture had been thrown upon the screen the general feeling seemed to be that the reproduction of the colours of nature was an established fact.—*Exchange*.

To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

QUERIES.

5347. **Yellow Paper**.—Can anyone tell me why the Hford printing-out paper turns yellow on being washed after toning? The bath is according to formula. What is the remedy?—**NAWTONIAN**.
5348. **Hand-Camera**.—Can any reader inform me from experience which is the better hand-camera, Griffiths' "Guinea and a-half" or Underwood's "Argosy"?—**ROB ROY**.
5349. **Borax Formula**.—I notice in report of the S. London Society's meeting Mr. Herbert gives a borax solution formula for toning, but it is not stated what quantity of chloride of gold should be used to the pint of solution. Also, in the combined hypo and borax fixing bath, it is not stated how long prints should remain in the bath to ensure complete fixation. Will Mr. Herbert kindly fill the gap, and thus help a beginner?—**ROBIN**.
5350. **Gloss on Prints**.—Can anyone tell me how to put a gloss on prints (permanent), otherwise than tacking or burnishing, and oblige?—**MOSS ROSE**.
5351. **Passing the Customs**.—Would some correspondent kindly inform me if there is any difficulty in getting plates, etc., through the Custom House in France? Would the officials want to examine a roll-holder in daylight?—**FRANCE**.
5352. **Emulsion Formula**.—Would any of your readers give me a simple formula for making dry plates, about 16 or 18 W., also a few hints as to same?—**APEX**.
5353. **Wood Dishes**.—Can someone give me a formula for coating inside of wooden dishes?—**APEX**.
5354. **Optical Lantern**.—Can some reader of the **AMATEUR PHOTOGRAPHER** recommend an optical lantern at a low figure?—**APEX**.
5355. **Bromide Developer**.—I should like a good hydroquinone formula for bromide papers and lantern slides.—**APEX**.
5356. **Ready-made Emulsion**.—Is there any dealer who sells emulsion for lantern slides, made up?—**APEX**.
5357. **Negatives**.—Will any kind reader say (1) how can an amateur tell when a plate has been under-exposed, (2) over-exposed, (3) under-developed, (4) over-developed?—**W. ELLIS**.
5358. **Enlarging**.—Can any reader inform me which is correct: quarter-plate to 12 by 10 equals 9 times or 3 times? In Wallis' "Dictionary," first edition, it gives 9 times. In same book for 1891 it gives 3 times (linear). If I wish to use a $\frac{1}{4}$ in. focus lens, what would be the respective distances from lens to easel and lens to negative?—**R. B. J.**
5359. **Lens Focus**.—Will any one who has a Lancaster Instantograph half-plate kindly tell me what is the shortest focus of a wide-angle lens that can be used without the tail-board cutting off the view?—**P. R. S.**
5360. **Acid Fixing Bath**.—What is the advantage of this bath over the ordinary one of hypo alone?—**A. G.**
5361. **Burnisher**.—Can any reader recommend the Knox burnisher as a good article?—**A. P.**
5362. **French Weights**.—What is the English weight of the following French grammes, viz.: 22, 24, 26, 31, 33, 36, and 42 grammes? An answer in drachms and grains will oblige.—**AN AMATEUR PHOTOGRAPHER**.
5363. **Collotype**.—I am wanting to understand the collotype process. If there is a reader who cares to give his experience I shall be glad of it.—**QUERIS**.
5364. **Potassium Chloro-platinite**.—How shall I set to work to make potassium chloro-platinite?—**ACHRODYNAMIC**.
5365. **Spoilt Negatives**.—I have hundreds of old negatives (spoilt). What good are they to any one? I have also hundreds of pieces of clear glass, all half-

plate size. Are these any good? Perhaps a reader could suggest something.—**LITHO**.

5366. **Bromide Paper**.—How are clouds printed in? What is the property of sulphocyanide of ammonium in toning bath? As bromide prints are toned after fixing, why should not the same procedure be followed with ordinary silver paper, and *vice versa*?—**B.**

QUERIES UNANSWERED.

Jan. 1.—Nos. 5326, 5336, 5337.

ANSWERS.

5366. **Bleaching Out**.—If instead of commercial blue vitriol, pure sulphate of copper be used, the formula will be all right, and the solution will reduce anything by converting the image into bromide, which has, however, to be dissolved out or else the prints will not be ready.—**OSIRIS**.
5365. **Photographs of Celebrities**.—On one of the photographs at Brockenhurst Station are words to the effect that the pictures were placed there by Mrs. Cameron, that being the place where she first met her son after a long absence.—**H. B. PECK**.
5320. **Sodium Sulphite or Sulphate**.—No, sodium sulphate will not do, nor can it be made fit for the use to which "An Amateur Photographer" wishes to apply it. When sodium sulphite is used in a developer it acts as a preservative; it gives bright, clear pictures, with good contrast; it keeps one's fingers clean and unstained, and density is easily obtained with it. Sodium sulphate, however, does not do the same work, and it retards development very considerably. Keep sodium sulphite in a tightly stoppered bottle; if left lying about in contact with the air, it becomes sodium sulphate.—**G. P.**
5321. **Xylonic Films**.—If "Achrodynamic" will write to me, I will give the information he requires. Editor has hand-camera.—**G. R. A.**
5321. **Xylonic Films**.—These give excellent results when fresh, and are well adapted for interior work, but seem to be more easily affected by damp than plates.—**PHOTO-ROVER**.
5324. **Carbon Printing**.—It is not practicable to enlarge on carbon tissue as on bromide paper, as the exposure required would be enormous. The method I would recommend is as follows:—Make a transparency by contact from your negative, giving a full exposure and not developing so far as to block up the detail in the shadows. From this make an enlarged negative on a slow plate of the size you require, and fix your transparency with the film side away from the lens. The enlarged negative will then be reversed right for left, and you can print direct in carbon from this, and obtain an unversed print without the trouble of double transfer. I can recommend the Thomas transparency plates for this work with the eiko-cum-hydro developer. The bichromate sensitising solution will keep indefinitely.—**THE SMITH**.
5325. **Building Studio**.—The size of the studio which "Anxious One" is thinking of erecting is about double the size generally used. Refer to the following named books: "Amateur Photographers' Annual," 1891 (1s.), and "The Studio, and What to Do in It" (H. P. Robinson, 2s. 6d.) Both these books would help you better than do, but should you only get one, I should advise you to purchase the latter, where full particulars are to be found.—**LONDON**.
5327. **Flash Lamp**.—The Challenge, supplied by Adams and Co. at 1s. 6d., is a cheap and effective one. The funnel is charged with powder, and the spirit lamp lit, and the powder blown through the flame, and will take any ordinary photograph well. Two or three connected give sufficient illumination for larger interiors or groups.—**IVANO**.
5328. **Retouching, Book on**.—Why not try "The Art of Retouching," by J. Hubert, 1s. (published by Hazell, Watson, and Viney, Ed., publishers of this paper); or write to Redmond Barrett, 50, Kellert Road, Brixton Hill, who gives lessons personally or by letter, and has a book for amateurs and professionals in the press.—**IVANO**.
5328. **Retouching, Book on**.—There are two very good books on the art of retouching, viz., "The Art of Retouching" (by Hubert, 1s.) and "The Art of Retouching Negatives and Colouring and Finishing Photographs" (by R. Johnson, 2s.) The most suitable would be the latter.—**LONDON**.
5328. **Retouching, Book on**.—Hubert's book on this subject could be obtained from the publishers of this paper, and at 1s. is good value.—**THE SMITH**.
5329. **Mounting**.—Fresh starch, used when cold, is the surest and best mounting medium for all processes.—**PHOTO ROVER**.
5330. **Landscapes with Snow**.—In my own opinion there does not seem to be any more trouble in developing plates which have been exposed on landscape and snow than an ordinary landscape. Plates may have some effect upon this. I use Barnett plates, ordinary Thornton-Pickard shutter, f/16, good light, 11.45 a.m., in November, and give one-fourth of a second exposure, with good results, using ordinary developer (Lockyer's).—**LONDON**.
5331. **Eastman Roller Films**.—These films are as good as cut films; all that is necessary is plenty of patience and plenty of developer.—**IVANO**.
5332. **Potassium, Bromide of**.—The potassium

bromide should be all right if kept dry. Chemicals are always best kept in wide-mouthed bottles.—**THE SMITH**.

5332. **Potassium, Bromide of**.—I would dry this bromide, and use same. I used a sample some time back I had kept a long time, and did not find the negative any the worse by using it.—**IVANO**.

5332. **Potassium, Bromide of**.—I should not be inclined to try it. No chemical can possibly be pure after lying in a packet for twelve months. I think "R. V. B." ought to throw it away and buy more, and keep it and all his other chemicals in stoppered bottles.—**G. P.**

5333. **Sodium Sulphite**.—Yes. Also soda sulphite and sodii sulphite.—**S. E. K.**

5335. **Toning and Fixing Bath**.—I should advise you keeping your toning bath separate from your fixing bath, and not have the two combined. Try the following borax bath:

Borax	..	..	..	100 gr.
Water	..	..	..	10 oz.
Gold	..	..	..	1 gr.

Dissolve the borax in hot water before adding the gold. There are about thirty formulae given in E. J. Wall's "Dictionary of Photography," which see. (Published by Hazell, Watson, and Viney, Ed., publishers of this paper).—**CODRICK**.

5335. **Toning and Fixing Bath**.—I do not think the formula you give can be good, although I have not tried it; there seems to be something wanting. But why not do the operations separately? You will be much more likely to be successful, and will certainly get better tones. I have got best results with the following formula on the Standard Photo Company's (1, Dufferin Street, Bunhill Row, London, E.C.) paper:—

Toning Bath.

Acetate of sodium	..	..	70 gr.
Bicarbonate of sodium	..	..	10 "
Chloride of gold	..	..	4 "
Water (distilled)	..	..	15 oz.

Fixing Bath.

Hyposulphite of sodium	..	..	2 oz.
Liq. ammonia	..	..	1 drim.
Water (distilled)	..	..	20 oz.

After toning and washing, immerse the prints fifteen minutes in the fixing bath. Have all baths and washing waters about 70 deg. F. If you will try a combined bath, the following is as good as is going:—

Phosphate of sodium	..	..	15 gr.
Sulphocyanide of ammonium	..	..	25 "
Hyposulphite of sodium	..	..	240 "
Water	..	..	2 oz.

To this mixture add 1 gr. gold chloride and proceed to tone. When the prints are the colours you like best, take them out, wash, and dry.—**G. P.**

5338. **Cresco-Fylma**.—I have just invested in a bottle of the above, and must say its action is very wonderful, and yields all the results the inventors claim for it. I tried it on some old lantern slides, and the 34 by 34 became 5 by 5. The film must be quite free from hypos. There is not the slightest trace of granularity or distortion, and no loss of density or definition.—**S. C. B. (GENOA)**.

5338. **Cresco-Fylma**.—I sent a quarter-plate to the inventors, and had returned to me an excellent half-plate opal for the negative, which was a poor one. I have not yet tried the process myself, but most certainly shall do so.—**G. R. A.**

5339. **Lantern**.—I have used W. C. Hughes' Phamphengos four-wick lantern with perfect satisfaction in public and private. Write for catalogue to Mr. Hughes, Mortimer Road, Kingsland Road, N., enclosing 1s. For same.—**CODRICK**.

5340. **Celerotype**.—This paper is manufactured by the Blackfriars Photographic and Sensitising Co. The only difference from the ordinary paper, for silver printing, is that gelatine is employed instead of albumen as a base. I have used the paper with excellent results, but it is one of those things that require practice. Gelatinised papers are, no doubt, coming to the front, and, when better understood, will be more appreciated than at present.—**S. E. K.**

5340. **Celerotype**.—A gelatino-chloride printing-out paper, and may be manipulated precisely as albumenised. The sulpho-cyanide gold toning bath is generally used. It is an admirable paper for small prints, and is of English manufacture.—**THE SMITH**.

5341. **Stereoscopic Lenses**.—Take the lenses from the mounts and lay them side by side on a sheet of white paper. You will probably find one of them has a slight green or yellow tinge which would slow the lens considerably. If, however, you can detect no difference in that respect, carefully test the diaphragms, and also the camera for light leakage.—**THE SMITH**.

5341. **Stereoscopic Lenses**.—Perhaps your lenses have not been properly pained. One may be microactinic than the other, the fault lying in the glasses; or, in developing, you may have tipped the dish on one side, and given one-half more time in the developer than the other. If the lenses are not properly paired for actinic power, get the optician to alter them.—**IVANO**.

5342. **Spots on Negative**.—These are silver stains caused by printing when negative or paper is in a damp state. They can sometimes be got rid of if taken in hand at first appearance by well rubbing the affected part with a soft handkerchief dipped in methylated spirit.—**PHOTO ROVER**.

5343. **Fogged Negative**.—I am inclined to think

that the dark-slide is at fault. Examine it very carefully. The slides are apt to warp with the damp, and the corner joints sometimes give way a little, but enough to admit a tiny ray of light sufficient to spoil every plate placed in the slide.—G. P.

5343. Fogged Negative.—No doubt the light comes in from the top of the slide when open for exposure, but it is difficult to surmise. It may arise from many causes, such as reflected light, etc.—IVANO.

5343. Fogged Negative.—The fog is caused by halation, or the reflection of the skylight from the back of the plate, and any dark object in the picture standing out against the sky suffers in precisely the same manner. The remedy is to use more heavily coated plates, and back them.—THE SMITH.

5344. Copying.—Yes, to c.d.v., not larger. It is a very simple process, viz.: Place the picture you wish to copy upon a wall or stand, perfectly upright, in a good light, before the window, if possible, and focus with camera. This is the largest size a half-plate camera can copy up to, unless the camera has very long bellows. The exposure with Ilford ordinary plates will be about 1½ to 2 minutes.—LONDON.

5344. Copying.—I copy cabinet photographs with a half-plate Instantograph, but use a short-focus portrait lens. The R.R. doublet is unsuitable for copying same size, as you cannot rack the bellows out far enough. I give two minutes' exposure (no stop), 8 in. from a No. 5 Bray's burner, and develop by Ilford formula, using ordinary Ilford plates.—SAGITTARIUS.

5345. Instantograph.—(1) 1½ in. (2) 2 in. (3) 2½ in. from base to top, and 8 in wide. (4) 7½ in. square. (5) 5½ in. high, 4½ wide. (6) 4½ in. Thickness of wood, ½ in.—J. H. P.

5346. Preservative for Pyro.—Sulphite of soda is far the best preservative. The following is about the best proportion:—

Pyro	1 oz.
Sulphite soda	3 "
Citric acid	30 gr.
Distilled water, to	10 oz.

—PHOTO-ROVER.

5346. Preservative for Pyro.—If you had mixed the sulphite of soda and citric acid in the proper proportions, the pyro ought to keep, but try this formula given by Wratten and Wainwright; it keeps well, according to my experience:—

Pyro	1 oz.
Sol. sulphite	6 "
Sulphuric acid	1 drin.
Water	80 oz.

Soda carbonate	6 oz.
Water	80 "

Mixed equal parts for normal developer.—IVANO.

5346. Preservative for Pyro.—I find the best preservative for pyro to be metabisulphite of potassium. Dissolve 1 oz. in 10 oz. of water, and pour into an ounce bottle of pyro. You will then have a 10 per cent. solution of pyro that will keep almost indefinitely. It will not darken in colour if half the bottle has been used and the rest put aside for a long time.—G. H. PALMER.

5346. Preservative for Pyro.—I have used for two or three years the following formula:—

Pyro	40 gr.
Metabisulphite potash	20 "
Ammonium bromide	20 "
Water	10 oz.

Ammonia	60 min.
Water	10 oz.

To develop equal parts of each, I have had a concentrated solution based on the above for about eighteen months, and the last ounce worked as well as the first.—CODEBCK.

5346. Preservative for Pyro.—Sulphurous (not sulphuric) acid is, I believe, the best acid to use with sulphite of sodium as a preservative for pyrogallol. I have not tried sal ammoniac and do not intend to. Nitric acid transforms sodium sulphite into sulphate (see answer to query 5320). Citric acid forms with the alkali in the developer a citrate, which is a powerful restrainer. However, I have found citric acid a good preservative when used in proper quantity and in the right way.—G. P.

EDITORIAL.

SPECIAL NOTICE.—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—EO: AM: PHOT:

H. NICHOLLS.—The cause of mottled negatives with quinal developer, accompanied by frilling, points to not rocking the dish, the use of too much caustic, and that probably soda; excess of caustic alkali tends to frilling most strongly.

W. THOMPSON.—The stereo slides are now in the judges' hands, and we expect the award fairly. All medals are being engraved, and you will receive

yours in due course. With all good wishes for better success still in the coming fights.

H. R. WEDMULLER.—The usual plan is to coat the back of the negative with a yellow matt varnish made by dissolving

Sandarac	18 gr.
Mastic	4 "
Dragon's blood	5 "
Ether	½ oz.
Benzol	80 to 100 drops.

When dry, this can easily be scraped off any dense parts of the negative, and specially weak parts worked on with a crayon and stump.

MOSS ROSE.—(1) It is utterly impossible to answer this; every plate in the market will in competent hands take a prize picture; it is not so much the plate, as the brains which dominate the user, that take the premier positions. (2) The best printing-out paper is that which will give you the best results from your negatives, and as these are not yet in existence we fail to see how you or anyone else can answer this question. Every negative almost requires a special printing process.

L. THIRKELL.—Apply to Perken, Son and Raymond, 99, Hatton Garden, E.C.

J. THOMAS.—(1) Make a positive by contact, and then make an enlarged negative. (2) Lantern or transparency plates are required in both cases. (3) Yes, the article can be relied on to turn out good work. (4) The enlarging of any quarter-plate negative to that size would be a strain; but anyhow, we think you would get good results.

HURTER AND DRIFFIELD.—We note your letter elsewhere. Shall be pleased to receive article.

W. DE H. BIRCH.—Much obliged. You will see that we use on another page.

GORDON M. SAVILE.—Thanks for your letter and good wishes, which are mutual. Always pleased to help you.

J. T. F.—Many thanks for correction of error, which is noted.

O. N. F. KELLY.—(1) Use any lantern plate, and the developer recommended for it. You could use the 19-in. Suter without any fear—that is to say, if your camera would rack out sufficiently. (2) Use the pure crystallised carbonate of soda and the pure carbonate of potash; allowance is made for water of crystallisation; about ½ oz. of the solution is required for a normal exposure. (3) The Ilford Isochromatic plates are made by the same process as Edwards', and are quite as good. (4) Yes, we think you would be satisfied with the working powers of the lens you name. (5) The sulpho-cyanide combines with the gold and forms a salt from which the gold is more easily deposited than usual. (6) We do not know the proportions of the bath you want. (7) The quality of the plates is, we believe, the same; stick to the one you have always used; they are pure bromide plates, we think. (8) All the three plates are practically of the same rapidity; we should prefer the "ordinary" for slow landscape work. (9) No, we think you will get more artistic results with such a small angle.

SPEN GLAZIER.—The exposures would be 10 sec. and 60 sec. respectively, we should think.

EXCELSIOR.—Write to the Photographic Instructor, Polytechnic, Regent Street, W., and state what you want, and ask for terms.

M. P.—The acidity is probably derived from the method of manufacture, and could most likely be got rid of by dissolving in water and precipitating with alcohol. The alkaline solution should, with the addition of some carbolic acid or thymol and spirit, keep good for a month or two. Personally we think it is about the worst moment there is, as prints have a strong tendency to leave the mount after a bit.

THE SMITH.—Many thanks for enclosures. Do not put it down to malice aforsought, say rather great nervousness.

MANFIELD.—The camera is easy to use and not likely to get out of order. Write to the maker for full descriptive pamphlet showing working parts, etc.

WM. ELLIS.—The prize slides are to be shown in your town on February 24th. Write to H. T. Robinson, Pittville House, Shore Heath, Stockport, for tickets.

COLONEL.—The slides are now under the judges' notice, and we hope to publish awards almost immediately.

W. ERRINGTON COWAN.—The error noted with thanks.

J. L. L.—(1) We should prefer a Beck's Autograph, Wray, or Suter. Let us know what you particularly want, and we will help you. (2) Argemotype paper is sold by the Fry Manufacturing Company, 5, Chandos Street, Charing Cross, W.C., and can be had from almost every dealer; and Sepiatype can be had from Sharp and Hitchmough, Dale Street, Liverpool.

C. F. ARCHER.—The Brixton and Clapham Camera Club, Secretary, F. W. Levett, 74, Geneva Road, Brixton, is your nearest society. Redmond Barrett, 50, Keltell Road, Brixton Hill, would give you lessons in retouching.

CODEBCK.—Very pleased for you to start the discussion at once.

H.—The camera you have is nothing but an old-fashioned copying camera, which could, of course, be used for enlarging in a dark-room as you suggest.

INSTANTOGRAPH.—1. Add 75 gr. of caustic soda to

the carbonate of potash, and the developer will work all right for slides and negatives if used stronger about ½ oz. of A and B, and ½ oz. of water for quarter-plate.

H. G.—We certainly could not choose between the lenses you name. We have tried both and worked with both, and we can only suggest your actually trying the lenses yourself.

GRIMSTON.—The best thing to do with your new tins is to wash well with strong ammonia and water, and then dry thoroughly and apply Aspinall's bath enamel two or three times.

A. MARSDEN.—It is quite probable your prints have been overlooked. We will have a look and write you.

GEO. PIRIE.—We may consider your idea. Very glad to have article on your district. The new extra supplement will be free. Syllabus and entry forms to follow.

TYRO.—Although the sunlight may have been bright optically, there is not the slightest doubt of its weak actinic power, hence your trouble which was caused by under-exposure.

A. RUSSELL.—Neutralise your gold with carbonate of soda, and use the acetate bath recommended by the makers of the paper, with the addition of a little carbonate of soda.

A. E. D.—We hope to publish result next week.

"Holidays with the Camera" Competition.

PHOTOGRAPHS have been received from the following:

Mr. E. W. Davies	Manchester
Mr. T. H. P. Heriot	London
Mr. C. J. Legge	Birkenhead
Mr. R. A. R. Bennett	Oxford
Miss Julia Mounsey	Carlisle
Mr. A. J. Paterson	Barnsley
Mr. T. Ballantyne	Glasgow
Mr. W. D. Groundsell	Isle of Wight
Rev. F. W. Stow, M.A.	Bedale
Mr. S. Francis Clarke, L.D.S.	Louth
Mr. E. B. Wain	Norton - in - the - Moors
Miss Rose Collier	Liverpool
Mr. J. Shaw	Manchester
Mr. C. Court Cole	Oxford
Mr. J. Simkins	Birmingham
Dr. Ringrose Atkins	Waterford
Mr. J. W. Kenworthy	Asht-n-under-Lyne
Mr. J. Bulbeck	Havant
Mr. A. Moon	Guildford
Mr. W. Lamont Howie	Eccles
Mr. H. A. Longmore	London
Mr. R. Young	London
Mr. G. A. Craee Calvert	London
Mr. J. W. Morgan	Tunbridge Wells
Mr. J. H. Gear	London
Mr. W. C. Third	Elgin
Mr. J. D. Lyssaght	Queenstown

Sale and Exchange.

RULES.

CHARGE.—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

ADDRESS.—All advertisements (which can be received up to Wednesday morning, 9 a.m.) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

CARRIAGE must be paid on all apparatus sent for report, and they will be returned carriage forward.

DEPOSITS.—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

COMMISSION.—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

PAYMENT.—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

ADVERTISEMENTS can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

PAYMENTS should be made in Postal Orders or Postage Stamps.

REPORTING.—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

Cameras, etc.—Underwood's quarter-plate Instanto camera, double slide; 20s.—66, Middle Street, Yeovil.

Cameras, Lenses, etc.—For sale, 12 by 10 camera, with two double dark-slides, and 15 by 12 Ross' triplet lens; £7 10s.—Ernest Webster, 24, West Promenade, Great Driffield, Yorks.

Dark Slides, etc.—Dark-slides, three instantographs, three specials, half-plates, new, 6s. 6d. each; camera, new, all latest movements, 5s.; approval.—Adams, Harold Wood, Essex.

Six 5 by 4 Barnett slides, good condition; 15s.—H. J. Robinson, Pittville House, Shaw Heath, Stockport.

Hand Cameras, etc.—Griffith's Guinea hand-camera, as new; 15s.—Faulkner, 313, Southwark Park Road.

Kodak, No. 4 regular, cost over £11 when perfect, containing a few films, in case; and tripod films; some unexposed films; what offers?—May be seen at the AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Lenses, etc.—Splendid half-plate R.R. lens and shutter, 27s. 6d.; Lancaster's half-plate instantograph lens and shutter and half-plate combination Rectigraph, both fit one flange, 55s.; time and instantaneous shutter, 10s. 6d.—Simpson, Old Nelson Street, Lowestoft.

7 by 5 R.R., splendid condition, covers whole plate; 30s.; cost 40s.; approval pleasure.—Avery, 45, Park Street, Dorset Square, London.

Instantaneous doublet lens (by Rouch, London), 5 by 4; price 21s.—G. Constable, Market Street, Lewes.

Sets.—Best London-made half-plate camera, three double slides, R.R. lens, tripod, cost 6 guineas, equal new; only 90s.; approval.—14, George Street, Stroud, Glos.

7½ by 5 Thornton-Pickard Tourist camera, with three double slides, turntable, tripod, and case; cost £13 13s.; will take £8 8s.; includes revolving back and all movements, in perfect condition.—E. Jackson, 71, Oxford Street, Manchester.

Meagher's 6½ by 4½ folding camera, with instantaneous lens and shutter, seven dark-slides, and new folding stand, 85s.; complete set for developing and printing for sale, cheap; suitable for amateur.—Apply, Valentine Charles, Steyning.

Whole-plate McKellen's treble patent camera and stand, three double slides and inner frames, 12in. R.R. lens (by Swift), with iris diaphragms, Kershaw's instantaneous shutter, two waterproof canvas bags to contain whole of above, and two ebonite dishes; this apparatus is genuine, and in perfect working order; cost £23; to be sold for cash; a good hand-camera would be taken in part payment.—Address, Joseph Chanot, 157, Wardour Street, London, W.

Half-plate stereoscopic or ordinary camera, three double slides, all latest improvements, and new, including waterproof case, £6, splendid instrument; Parks' bamboo 10s. 6d. tripod, 6s.; Kershaw instantaneous shutter, 2½ in., 10s.; Thornton time shutter, stereoscopic 1½ in. apertures, 3¼ in. centres, 18s.—1, James Leech Street, Stockport.

Superior half-plate set of photographic apparatus, consisting of camera (Photo Artists' Society), with leather bellows, double swing-back, rack and pinion focussing, extra sliding front, and removable division for stereoscopic work, three double dark-slides, Dallmeyer's R.R. lens, Jackson's instantaneous shutter, Kennett's sliding stand, and case with partitions and strap for carrying; cost, net, £13; price 10 guineas.—Mr. Oxford, Devises.

Whole-plate Lancaster's Instantograph camera, latest pattern, two double backs, leather bag, stand, rectilinear lens; £5; exceptional bargain.—Ernest Scott, 25, Oxford Street, Newcastle-on-Tyne.

For sale, rapid rectilinear lens and stops, with case, 12s.; quarter telescopic camera stand, 7s. 6d.; two metal slides, 3s.; rack and pinion, 3s.; ruby lamp, 2s.; view-finder, 2s. 6d., or offers.—Sewell, Spen Cottage, Cleckheaton, Yorkshire.

Lancaster's 1891 half-plate instantograph camera, slide, tripod, R.R. lens, new; 66s. 6d.—John Slade, Slad Road, Stroud.

Half-plate instantograph, with combination Rectigraph lens, complete in waterproof case, 90s.—Apply, No. 236, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

Sundries.—AMATEUR PHOTOGRAPHER, vols. x., xi., xii., xiii., xiv., clean, complete with indexes, 10d. per volume; "Photography," Nos. 28 to 164, with indexes, 3s. 6d.—R. H., 9, Cornwall Terrace, Elliscombe Road, Old Charlton, S.E.

150 AMATEUR PHOTOGRAPHERS, 1d. each; 100 "Photography," 3d. each, all clean; lot 10s.; bargain.—L., 8, Kenilworth Road, Kilburn, London, N.W.

Enlarging lantern front, with stage for negatives, 6 in. condensers, and powerful 5-wick lamp; £2.—A. H. Webbing, Hove Park Villas, Brighton.

Whole-plate Underwood's Convention camera, double back, and tripod, no lens, £3 10s.; Lancaster's camera case, 6s.; platinum tube, scales, dishes, measures, stoppered and dropping bottles, and AMATEUR PHOTOGRAPHER, "Photography," "Reporter," and "Specials."—W., 30, Nutfield Road, East Dulwich, London.

Six bound vols. of AMATEUR PHOTOGRAPHER and two vols. unbound, containing Wall's "Dictionary of Photography" and "Photographic Procedure," Robin-

son's "Chapters on Art Photography," Lyonel Clark's "Development," Hepworth's "WinterWork," Leaper's "Experimental Photography" and "Photographic Optics," Major Nott's "Photographic References" and "Photography as a Practical Art," Blanchard's "The Stereoscope," Harrison's "Instantaneous Photography," Bothamley's "Chemistry for Photographers," Pringle's "Photo-Micrography," competitive papers, holiday resorts; these volumes form a valuable reference library for photographers; 25s.—Mr. Oxford, Devises.

For sale, vols. vi. to xiv. AMATEUR PHOTOGRAPHER and vol. iv. "Photographic Reporter," all clean, and in good condition, either together or in lots.—Perrott-Smith, 57, Grove, Bedford.

Splendid full-size mellow toned solo violin, suit lady or gentlemen for solo or concert, complete with good bow and case, warranted in perfect order, and fit for any player; will take very low figure, 16s. 6d.; anyone wanting a genuine bargain should secure this immediately; 10s. worth of first-class music will be included free.—Mrs. Graham, College Buildings, Ipswich.

WANTED.

Dark Slides.—Tyler's double dark-slides, quarter-plate, in exchange for full-plate.—Rev. Dunnett, Bilston.

Hand-Cameras, etc.—Quarter-plate hand-camera without lens if possible, for cash.—State full particulars to Crossley, Roudley, Leeds.

Talmer hand-camera, in good condition, cheap for cash, new changing bag, two finders, etc.; mention kind of lens.—J. H. Martin, 22, Kidbrook Grove, Blackheath, London, S.E.

Good quarter hand-camera; exchange gent's 18 ct. diamond ring, cost £7.—17, Sedan Street, Waltham.

Good hand-camera, in exchange for half-plate, with new rectilinear lens.—Gott, Ironmonger, Keighley.

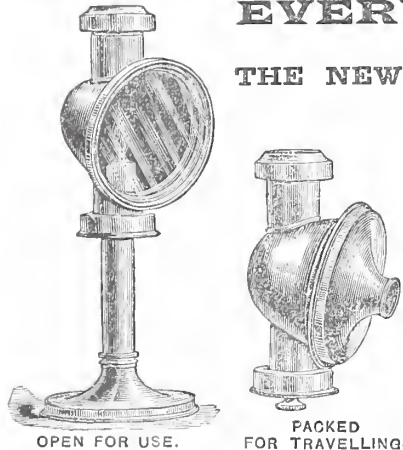
Lantern.—Biannual lantern, for light only, with mahogany body and good lenses.—H. Chorlton, Tottington, Lancs.

Lenses, etc.—Suter aplanat No. 3B, Wray, or Optimus half-plate R.R.—F. Kelly, The Lodge, Mount-rath, Ireland.

Sets.—Quarter or half plate camera, latest improvements, R.R. lens, shutter, stand, etc.; particulars.—W. R. Beavis, 22, Oakhurst Grove, East Dulwich.

Sundries.—Photographic apparatus; exchange superior conjuring apparatus; ins. ructions.—11, Waterloo Crescent, Dover.

1 Ashford's stand, good condition, cheap for cash.—66, Middle Street, Yeovil.



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FRIDAY, JANUARY 15, 1892.

[PRICE TWOPENCE.]

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—"Holidays with the Camera," awards—Sulphurised Asphalt—Photographing a Mirage—New Society at Todmorden—South London Phot. Soc. Social Evening—Lantern Society for Douglas—Note to our Readers—A Monster Camera—French Photographic Exhibition—Darlington Phot. Soc.—P. S. G. B. Elementary Lectures—New Society at Leigh—Carbon Tissue on Mica.

LEADER.—The Acid Fixing Bath.

LETTERS.—Watkins' Exposure Meter (A. Watkins)—Eikonogen (Codbeck).

ARTICLES.—Photographic Procedure (Wall)—Lecturer's Portable Reading Desk (W. L. Howie)—A New Telescopic-photographic Lens (Dallmeyer)—The Lantern, and How to Use it (Goodwin Norton).

EXHIBITIONS.—West London Society—Leeds.

SOCIETIES' MEETINGS.—Brixton and Clapham—Camera Club—Darlington—Devonport—Douglas Lantern—Faversham—Glossop Dale—Hereford—Holborn—Leigh—Lewes—Phot. Soc. of Ireland—Preston—Richmond Camera Club—Rotherham—Sheffield—South London—Stockton—Tunbridge Wells—West Surrey—Societies' Fixtures.

APPARATUS.—The "Professional" Print-Drying Pad—Tyler's New Single Dark-Slide and Tap Filter—Adams and Co.'s Pantoscope—Wheeler's New Photographic Helps—Percy Lund's Snap-Shot Album.

QUARTERLY EXAMINATIONS IN PHOTOGRAPHY.

HOLIDAYS WITH THE CAMERA.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All Communications should reach the Editor by Tuesday.)

TERMS OF SUBSCRIPTION—

UNITED KINGDOM.....	Six Months, 5s. 6d.	Twelve Months, 10s. 10d.
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OUT OF POSTAL UNION	" 7s. 9d.	" 15s. 3d.

TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE and EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (SALE and EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.)

"Amateur Photographer" Monthly Competition No. 32.—"INLAND SCENERY, WITH OR WITHOUT FIGURE." Latest day, January 25th.—Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, February 12th.)

We are very pleased to be able to publish at so early a date the award of the judges who have so kindly examined the photographs sent to the AMATEUR PHOTOGRAPHER "Holidays with the Camera" competition. It is very gratifying to find that the number of entries (sixty-one) is considerably in advance of last year, when forty-four ladies and gentlemen contributed. Photographs have been received from all parts of the world, and describe travels and holidays spent in many climes. Of the photographs we can say that, taken as a whole, the standard is very high. The educational work of the AMATEUR PHOTOGRAPHER "Monthly Competitions" is very manifest. Of the MSS. accompanying the photographs we can at present say nothing, except that it will be eminently useful in compiling the book "Holidays with the Camera," further particulars of which will be announced in due course.

We were fortunate in securing the able services of Mr. H. P. Robinson and Mr. Alfred Maskell as judges; we had hoped they would have had the assistance of Mr. Geo. Davison, but he was, unfortunately, engaged. We can assure our readers and the competitors that the whole of the photographs, some six or seven hundred, were subjected to the most severe criticism. As a rule the most prominent fault is want of evenness and a fickleness in the use of paper, process, mount, and size of prints. Mr. Robinson was particularly strong in condemning this fickleness; it is well known that his principle of working has always been to prove plate, paper, and process, and then to stick to them. Nothing is more displeasing to an artist's eye than to have six or twelve photographs placed before him, each one, possibly, varying in size and colour. A full list of the competitors is given in another column. The awards are as follows:—

First Gold Medal.

FRANCIS POWELL Duncoon.

The twelve photographs contributed by Mr. Powell, a well-known water-colour artist, are gems, the treatment of figures proving how useful a camera is as the handmaid of art.

Second Gold Medal.

S. FRANCIS CLARKE Louth.

Mr. Clarke will not be more pleased than we are at his success. We know how much he has hoped for the distinction, "AMATEUR PHOTOGRAPHER Gold Medallist." His work was all done during "A Holiday in the Savoy," and we are glad to note that in the introduction of figures there is none

of the stiffness which marred some of Mr. Clarke's earlier pictures. He has patiently and persistently worked up to our Gold Medal, and the award will stimulate others in the little photographic centre Mr. and Mrs. Clarke have gathered round them at Louth.

First Silver Medal.

REV. T. PERKINS Shaftesbury.

This award will also give much satisfaction. Mr. Perkins is well known as a very painstaking worker, and many of the photographs which illustrate "A Six Weeks' Holiday in the South and South-West of England" are of very high quality, and show much judgment in selection and execution.

Second Silver Medal.

C. COURT COLE Oxford.

This prize-winner's photographs are entirely architectural, and make up a very fine series of views at Oxford, taken at holiday-time.

First Bronze Medal.

DR. RINGROSE ATKINS, M.A. Waterford.

Dr. Atkins contributes a fine series of photographs, illustrative of "The Theatres and Temples of Ancient Greece." A fault in these photographs is an unevenness in tone of print and the varying size.

Second Bronze Medal.

A. R. DRESSER Springfield¹
Bexley Heath.

The photographs contributed by Mr. Dresser are mostly sea-pieces taken during "A Holiday at Hastings." They are all, we believe, enlargements on bromide paper from hand-camera negatives. Mr. Dresser has secured most varying effects of colour by local toning.

Third Bronze Medal.

JOHN OSWELL BURY Wrexham.

Mr. Bury sends some very charming views taken on the "Wild Welsh Coast.

First Certificate.

R. H. LLEWELIN ROBERTS Clevedon.

This competitor's photographs were taken during a "Three Weeks' Tour in Norway," and give us very admirable representations of some of the beauty spots of that favourite "Holiday Resort."

Second Certificate.

HARRY HOLT Liverpool.

Ten photographs on Obernetter paper are sent in, which were taken by the competitor during a holiday spent in "The Lakes and North Wales."

We have to accord to Mr. Robinson and Mr. Maskell our very grateful thanks for the time and patience exercised in judging the "Holidays with the Camera" competition. The work has been well done, and we are quite sure that our competitors will be fully satisfied with the awards. We shall hope to be able to loan the prize photographs in about a month's time.

HERR VALENTA publishes in this month's *Photographische Correspondenz* a simplified method of preparing light-sensitive sulphurised asphalt, the translation of which we hope to publish next week.

HERR OLDAL was fortunate enough this autumn, whilst travelling on one of the large plains of Hungary, to see a mirage, or *fata morgana*, and successfully photographed it. So far as we are aware, this has but seldom, if ever, been done before. We shall be glad if our readers can give us any reference to such a feat.

A NEW photographic society is being formed in connection with the Scientific Association at Todmorden. About twenty-five members have already been enrolled, and there is good promise of more to follow. The Hon. Secretary's address is Mr. J. T. Binns, 3, Garden Terrace, Todmorden, who will be pleased to give any of our readers in that district further information.

THE South London Photographic Society will have a social evening, with vocal, instrumental, and lantern entertainment, at Hanover Hall, Rye Lane, on Monday, January 18th, to commence at 8 p.m.

ADVICE has reached us that a lantern society has been formed at Douglas, Isle of Man. There is already a photographic society in existence, but as some of the members objected to the use of the limelight, it was considered advisable to form a separate society for lantern work only. It is quite possible that both societies may do good service in their particular branches, as there is practically an unlimited field open to both. Still, we cannot help feeling some small amount of surprise at the members of any photographic society having qualms of fear at the use of the limelight—especially the bold Manx men.

IN our last issue we called the attention of our readers to the fact that we now go to press rather earlier than before. Many have sent us their communications earlier, but still there are some who possibly did not see our note, and therefore we again repeat that to ensure insertion in the week's paper all communications must reach us on Tuesday morning; after that time we do not guarantee the insertion.

To the attention of the secretaries of societies we commend our "Fixtures" list, and we shall be glad if they will send us early note of papers, etc., which, we venture to think, will be of assistance to our readers generally. We are making a collection of rules for societies, and we shall be grateful for any copies which may be sent us. When we have a fairly complete collection we shall edit a small note-book, giving the gist of the same, which will then always be at the service of new societies; some such guide will, we think, be found useful by society promoters.

WE have already once referred to a monster camera being made by Messrs. Platt and Witte, and the following details of its structure will be interesting. It is made for plates 30 in. by 30 in., and of the best Spanish mahogany, and extends to 8 feet. The front of the camera is actuated by a specially cut screw, and the copying-board by one 7 feet in length; the board also having screws for moving laterally and horizontally, to allow of accurate centering of the object to be copied. The dark slides are fitted with revolving shutters, consisting of 100 strips cut from one piece of mahogany, and when shut down it is difficult to detect the joins. The bellows were made from fifteen of the largest skins that could be bought, and the camera is made to run on wheels. A brass rule divided to eighths of an inch is let in the base-board, an indicator being also affixed to the camera. When completed, the whole erection weighs about 4 cwt. This would be a nice little hand-camera for a Cyclops, and certainly, even now, it speaks well for the makers that it is as easily manipulated as a small one.

WE see by our contemporary, the *Bulletin du Photo Club* of Paris, that an international exhibition of photography and kindred arts and industries is to be held in the Palais

des Beaux-Arts, Champ-de-Mars, Paris, from April to September. It is being promoted by the Chambre Syndicale, and the Photo Club, and is under the patronage of several members of the Government, and the Société Française de Photographie. There are to be eight classes: 1st, history of photography; 2nd, scientific photography, including astronomical, micro-photography, photo-topography, medical and judicial photography; 3rd, artistic photography, limited to amateurs; 4th, artistic photography for professionals, including portraits, views, reproductions, etc.; 5th, industrial photography, including photo-mechanical prints, stereoscopy, and prints on glass, wood, ivory, silk, etc.; 6th, photographic preparations and chemicals; 7th, photographic materials, such as lenses, cameras, etc.; 8th, industries allied to photography (lighting, electricity, etc.) All applications for space or further information must be made to M. le Commissaire-Général, Palais des Beaux-Arts, Champ-de-Mars, Paris.

THE Darlington Photographic Society will hold their annual conversazione and exhibition on March 3rd. There are nine classes in all, three of which are open to outsiders; the prizes offered are given by members of the society, and it speaks well for the energy and interest of the members that so many can be found to give such a number of prizes of such value. The Hon. Sec., Mr. P. W. Forster, Elmbank, Darlington, will be pleased to give any further information.

THE Photographic Society of Great Britain have instituted a series of lectures, which are somewhat akin in idea to the elementary lectures of the Camera Club. The subjects announced so far are: January 19th, "Distortion of Outline in Photography," by Chapman Jones; January 26th, "Discussion on the Relative Merits of Different Processes for the Production of Lantern-slides;" February 2nd, "Photography as a Branch of Technology," by Professor Meldola; February 16, anniversary meeting; February 23rd, "Printing-Out Emulsion Papers." We believe that only members of the Society or of affiliated societies are admitted, and it is to be regretted, we think, that the Council did not see their way clear to throw them open to all comers.

A NEW photographic society has, we note, been formed for Leigh and district, with a good promise for the future. The opening meeting is to be held on the 21st inst., and Mr. J. H. Stephen, at the Literary Society's rooms, Leigh, will be pleased to give any reader in that neighbourhood all information.

WE note the introduction, on the Continent, of sheets of mica coated with pigmented gelatine, which only requires sensitising in a bath of bichromate of potash, and they can then be used exactly the same as ordinary carbon tissue. It is obvious that prints thus prepared would lend themselves easily for window decoration, or might actually replace glass itself. Mica was, we believe, used before glass for filling windows.

WE regret that we are not able to publish the award of our judges in the Stereoscopic Slide Competition this week, as promised, but will hope to do so next week. The report should have reached us in time for press, but has been unfortunately delayed.

WE are receiving numerous applications for the syllabus for our current Quarterly Examination in Photography, but not in quite such numbers as we had hoped. It will

be essentially confined to beginners, and the questions will be as elementary as possible, and in nearly every case it will be possible to answer the same from past issues of the AMATEUR PHOTOGRAPHER. The successful candidates for the last examination have written informing us of their wants, and we hope to satisfy them in the course of the week. All three gentlemen acknowledge the great educating power which this simple examination possesses, and, in our opinion, there is nothing like questions of this kind for teaching the theory of photography and extending the general knowledge on the subject. To answer the questions properly, it is really necessary to read up a good deal, and poor indeed must be the mind which cannot assimilate a great deal of what it has to look through.

THE ACID FIXING BATH.

WE have already called attention in our issue of October 9th, to the use of the acid fixing bath, but from the numerous inquiries we receive, many of our readers have either not seen or noticed our first article.

Eder, in 1885, mentioned that an addition of citric or tartaric acid to the ordinary fixing bath prevented the yellow staining of pyro-developed negatives. Reed, in 1889, employed acetic acid, and Furnell used a mixture of alum and hypo.

The disadvantages these mixtures have, however, are that the hypo is partially decomposed and sulphur is deposited, and, as pointed out by Herr Lainer, such a mixture slowly deposits sulphur for nearly three months; it is obvious, therefore, that it is extremely likely to cause sulphur contamination of the film. Lainer found that a mixture of an acid and neutral sodium sulphite when added to hypo solution, did not decompose it nor cause deposition of sulphur, and suggested as a practical formula the following:—

Sodium sulphite	..	..	..	1 oz.
Tartaric or citric acid	..	..	..	$\frac{1}{2}$ "
Water	..	..	..	4 "

Dissolve the sulphite in 3 oz. of water and the acid in the remainder, and add to the sulphite. This mixture should be quite clear but smell strongly of free sulphurous acid. This quantity should be added to

Hypo-sulphite of soda	..	..	..	6 oz.
Water	..	..	..	30 "

If no tartaric or citric acid be handy, sulphuric acid may take their place, and the following may be considered the practical form of making it:—

Sodium sulphite	..	..	..	2 oz.
Sulphuric acid	..	..	..	$\frac{1}{4}$ "
Water	..	..	..	4 "

Dissolve as directed above, and add to the same amount of hypo solution.

The action of the acid fixing bath is certainly good on the negative; it prevents stains and frilling, and acts as a clearer, also it does not discolour so rapidly as the ordinary fixing bath. Its use is not confined to negative work alone, but may be used for bromide paper, lantern slides, and transparencies, and with bromide paper it entirely obviates the use of the clearing bath, still it is just as well to use a second acid fixing bath.

M. Audra, writing in the "American Annual of Photography" for this year, p. 92, says, "I dissolve the hypo in a saturated solution of boracic acid—there is no decomposition or separation of the sulphohydric acid, as is the case with stronger acids or with alum; but the same advantages are derived as with the addition of this last-mentioned salt to the fixing bath; that is to say, the

purity of the image and cleaning of the film. Another decided advantage is that the bath can be kept in its original clear state for a long time, and does not get dark after fixing a few plates, as is generally the case." We have now had a fixing bath made up from M. Audra's prescription, under observation and in use for the last ten days, and we certainly think that, although not quite equal to the acid fixing baths given above, it certainly has some advantages which should lead to its trial in our practice.

Boracic acid is a weak acid, sparingly soluble in cold water, the actual solubility being 1 in 25 at 58 deg. F.; it is much more soluble in hot, and at boiling point dissolves in about twice its weight of water. The best way to make a saturated solution, supposing we want to make a pint of solution, is to take three-quarters of an ounce of the acid, which is obtainable either in the form of a very fine powder or in micaceous scales, of peculiar greasy feel between the fingers, and to add the acid to five ounces of boiling water, and then add ten ounces of warm water and dissolve the hypo by shaking or allowing to stand in front of the fire. We have not tried the boracic bath for bromide paper, and it is possible and even probable that it would not act quite so well as the ordinary process of clearing and fixing, but for negatives it certainly seems to us to act efficiently. We shall be pleased to hear what our readers have to say on this subject after trial of it.



Letters to the Editor.

WATKINS' EXPOSURE METER.

SIR,—Mr. Wall's criticisms on exposure instruments and tables, in his articles on "Photographic Procedure," are obviously honest and unbiased, and in the case of his objections to the sensitive paper used in my exposure meter, he expressly states that they may be purely theoretical. Nevertheless, I know from my special work in this direction that these objections are not quite sound, and I trust you will afford me space to consider them under two headings.

First Objection: That the ratio between the formation of the visible image on the paper does not of necessity bear a constant value to the formation of the invisible image on the plate. In other words, that the paper may not be sensitive to the same range of spectrum rays as an average gelatine bromide plate.

Now this objection is based upon a fact, for if the same emulsion used on the plate is spread on paper and treated with a nitrite, it will *not*, according to my experience, be a reliable guide for the exposure of that plate, as it will be comparatively too sensitive to feeble rays, and therefore indicate too short an exposure for badly lighted subjects.

It is the inference that I *do* use the same emulsion which is entirely wrong. It is well known that there are, broadly speaking, two classes of gelatino-bromide (including bromo-iodide) emulsions; the one, giving *soft* negatives, is fairly sensitive to the feebler rays of light; the other class, giving hard or brilliant negatives, is comparatively insensitive to these feeble or non-actinic rays.

It is my experience that if a selected emulsion of the hard class (such as is used for lantern slides) is treated with a suitable strength of a nitrite solution, its darkening under light is a most accurate guide to the exposure of an average plate, one inclined to the soft class. This is now no matter of speculation, but has been proved by the experience of a large number of photographers who find they are able to accurately gauge the difference in exposures for outdoor and indoor subjects by means of this paper, a problem which is not even attempted by exposure tables, and those instruments which are based upon them.

Second Objection: That the paper is hygroscopic, and that this is due to the hygroscopic nature of the nitrite with which it is treated.

Now it is true that the paper, and the tint which it assumes under light, is liable to be affected with *excessive* damp, although not nearly so much as in the earlier issues of my paper, when an

unnecessary amount of nitrite was used. This defect is not felt with the most ordinary precautions, the instrument being kept in the pocket or in any ordinary room.

The conclusion that this hygroscopic nature of the paper is due to the hygroscopic salt used is quite natural, but as a matter of fact quite wrong. Before I brought out the instrument I experimented with several salts which are not hygroscopic but actually efflorescent (sulphites and metabisulphites), and which seem almost as effective for the purpose as the nitrite salt. I have also lately made repeated trials of them, and invariably find that gelatino-bromide paper treated with a sulphite or metabisulphite is quite as hygroscopic—judged by the alteration in the darkened tint—as that treated with the proportion of nitrite I now use in my paper (a far smaller quantity, by the way, than Mr. Wall speaks of, and *not* the potassium salt).

It is the plain paper itself and the gelatine which are so hygroscopic. In case anyone should think that absolute dryness is a thing to be aimed at, I point out that according to Captain Abney's equation the presence of water is necessary to the rapid darkening of the paper in the presence of a nitrite, and I presume of a sulphite also. It is *excessive* moisture which is objectionable. Paper of this class does not keep indefinitely—probably six to twelve months under average conditions. If kept damp it loses sensitiveness, and therefore in order to ensure it reaching the user in good condition—a most important point when sent abroad—the makers of my instrument are now sending out all refills sealed up in metal capsules in the presence of chloride of calcium. In this state the paper will keep well, but is insensitive until it has absorbed a little moisture from the air.

It must not be thought that I claim to have reached perfection in paper for actinometers; there is still room for investigation and improvement.—Yours, etc.,

Hereford, January 8th, 1892.

ALFRED WATKINS.

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EIKONOGEN.

SIR,—Like a good many of your readers who have not the benefit of any society, I should like the experience of those who have, with regard to eikonogen. The first formula I tried was No. 1 on the list sent out with eiko; this I found to be very slow. The second formula was that of Dr. Piffard, which I found to be quite as quick as pyro and ammonia, and equally as suitable, viz.:—(A): Eiko, 1 oz.; sulphite of soda, 2 oz.; bromide of potassium, 8 gr.; water, 16 oz. (B) Carbonate of potash, 1 oz.; water, 8 oz. For use, 1 or 1½ drachms of (B) to each oz. of (A). With both of these I found decomposition to set in after a week or ten days, and consequently abandoned it for some time, until I saw Mr. Chapman's formula of eiko and hydro recommended for positives and negatives. This, like the former, became useless in about the same time. Knowing that eiko would not dissolve in the presence of either citric acid or metabisulphite of potash, I first dissolved some eiko in two small bottles containing sulphite of soda, and then added citric acid to the one and metabisulphite to the other. These were made up on the 21st September last, and are good and workable to the time of writing. About the first week in October I made up Mr. Chapman's formula again, and added citric acid to it after all the other ingredients were dissolved, and have found it keep good and work well up to the present time, and have used it with Ilford rapid bromide paper and lantern-slides, Eastman bromide paper, Paget xxxxx quarter-plates, and Clarke's negatives and lantern-slides.

Mr. C. H. Bothamley, in this year's "American Annual of Photography," p. 28-9, says that sulphite of soda contains a small quantity of carbonate of soda, which should be neutralised by adding sulphurous acid or some other acid, and as I have added citric acid in one bottle and metabisulphite in the other will explain the reason of its permanency. Those of your readers who try either citric acid or metabisulphite of potash, each of which must only be added after the eiko has been quite dissolved with sulphite of soda, will, I think, have no cause to complain of its instability. The formula of Mr. Chapman, as now used by myself, is—(A) Eiko, 120 gr.; hydro, 40 gr.; sulphite of soda, 1 oz.; citric acid, 30 gr.; water, 20 oz. (B) Hydrate of soda, 30 gr.; carbonate of soda (chem. pure), 120 gr.; bromide potash, 5 gr.; water, 20 oz. I should like to read the experiences of some of your readers with reference to eikonogen, as I hear it is spoken of as the coming developer when properly understood.—Yours truly,

CODBECK.

Photographic Procedure.

By E. J. WALL.

Author of the "Dictionary of Photography."

SECTION IV.—THE DARK-ROOM.

MOST of my readers will probably have a dark-room already fitted up, therefore it will hardly be necessary for me to describe at any length this operation. In most cases we are circumscribed in our efforts in this direction by the space at our command; household arrangements must not be upset too much, or, speaking from personal experience, troubles are likely to ensue.

Many of us have worked before now in coal cellars or under stairs; half suffocated by the fumes of ammonia or the smoke of a paraffin lamp, which had also a happy knack of going out at the most critical moment, either when we had a negative in the dish or anxiously were examining it by the expiring flame. This naturally leads us to consider what is the best source of light for our room. In the old wet collodion days it was customary to use a bright orange glass, but with the advent of gelatine plates, photographers rushed to the opposite extreme and used a very deep ruby-red glass, working in the light of which has been compared to Cimmerian darkness. But before considering the exact shade of colour to employ, it might possibly be advantageous to determine whether the light should be daylight or artificial light. Unquestionably, daylight is the cheapest, but cheapness is hardly of such great importance as convenience and efficiency. Daylight is always a variable factor which has some considerable influence on the resulting negative. We have to judge of our negative by transmitted light, and unless we have a constant light it will be impossible for us to judge correctly of the density of the deposit; in other words, unless we have a constant and uniform light our negatives may sometimes be too dense and sometimes too thin, as everyone knows that the stronger the light the thinner a negative looks.

We have, therefore, decided that we prefer artificial light, but as probably some have already a dark-room illuminated by daylight, we may as well see what is the best light to use. Captain Abney, in his "Treatise on Photography," fifth edition, p. 322 *et seq.*, has some very good notes on this point, from which it is evident that whilst a sheet of ruby glass and a sheet of stained red glass superimposed make the safest light, yet the illuminating power is extremely small. For this reason Abney recommends a deep orange paper, and he says:—

"Two thicknesses of this are almost absolutely safe, and if three thicknesses be used when sunlight falls on the window there will be no danger of veiling the plate. If thought desirable, the paper may be oiled and rendered more translucent. This of course allows the passage of more light, and is as safe. Some photographers use a paper which is known as canary medium. It is paper impregnated with lead chromate, and gives a pleasant whitish light. If the paper used be thin, it is not safe, since too much of the green of the spectrum passes; but if stout paper be employed, it may be used with safety, since the light penetrating is small. The writer's advice is, however, to use the orange paper in preference to any other. When artificial light is used, a lantern should be constructed or purchased. There are several in the market which are satisfactory. They are usually carefully glazed, but it is no detriment if the glass breaks and has to be removed, since a piece of orange paper above alluded to can be put in its place. A screen made by half cutting through a sheet of large cardboard at three equal intervals can be made by the amateur; the centre portion of each leaf is removed and filled in with orange paper. Such a screen folds round an ordinary chamber candlestick, and if the light striking a white ceiling be too intense, it can be cut off by placing loosely over the top a sheet of newspaper or a board. The reflection from the ceiling has never been found by the writer to hurt a plate during development, as might be expected if considered theoretically. The illumination from any source varies inversely as the

square of the distance; and if the ceiling is six feet off it is illuminated only $\frac{1}{36}$ of that which a sheet of white paper would be one foot off. The ceiling becomes another source of light. It is again weakened by travelling back to operator, say another six feet. Roughly, it may be said that the illumination is $\frac{1}{216}$ of that from the light at a foot off. If one second will blacken a plate when a candle is one foot off, $\frac{1}{216}$ of a candle will not visibly affect it in the short time necessary to place the plate in the developing dish and pour over the developer. When the developer has wetted the plate it becomes comparatively insensitive."

The best medium I have met with personally is a deep orange glass as used by Messrs. Benham and Froud in their "Perfection" candle lamp. This I have had in use, with a sheet of ground glass behind it, for some time, and have never found the most rapid plate fogged by it, and have even developed rapid isochromatic plates by the light, merely taking the precaution to see that the light did not actually shine upon the developing dish.

Many amateurs make a serious mistake in working as close to the light as possible, and hauling the poor unfortunate plate out of the bath, and holding it up close to the light every half minute, this is a very good way to fog a plate, and one can always make oneself happy afterwards by blaming the plate and not one's own stupidity. I always work as far as possible by reflected light; that is to say, the lamp is placed on my left hand, so that the developing dish is in actual shadow, and is only illuminated by the light reflected from a white-washed wall.

As already stated, the writer prefers artificial light, but at the same time has a dark-room of 14 ft. by 10 ft., with a window in it measuring 4 ft. 6 in. by 5 ft. The upper part of the window is blocked out by a movable frame made of laths nailed together, and covered with canary medium; inside the canary medium is a piece of black oil baize, which is removable. The canary is used for bromide work, but when plates are being manipulated the baize cloth is hooked on, and little or no light enters. The bottom of the window is permanently blocked out by a couple of coats of Aspinall's sealing-wax red enamel. This gives a light which is fairly bright, and enables one to walk about the room with ease and comfort, and the window looks very nice outside, whereas paper stuck on a window always looks poor and dirty, and so far I have found the light safe.

There is one point in connection with dark-room illumination which it is just as well to note; that is, that ground glass or opal glass will subdue the light considerably, and make it as a rule safer. Secondly, that if one thickness of any coloured medium cuts off 9-10ths of the actinic rays and 1-10th of the less refrangible rays, a second thickness of the same medium will cut off the same amount of the light that is left, so that we can reduce the actinic light in much greater proportion to the safe light.

(To be continued.)



Lecturer's Portable Reading Desk.

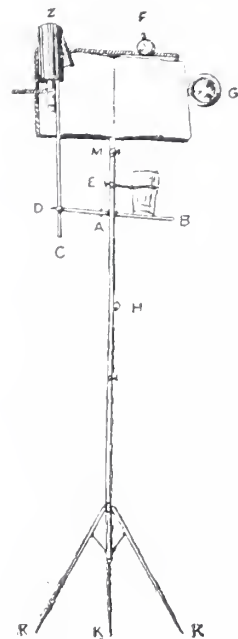
By W. LAMOND HOWIE, F.C.S.

THE lantern lecturer who is compelled to use notes and does not carry his own reading desk and lamp, so often finds that the arrangements made for him by the society before whom he is to exhibit are unsatisfactory or have not been considered at all, that it is strange that some portable reading desk has not long ago been put upon the market. I have just seen one by Mr. Chadwick, of Manchester, which has considerable merit, but is on quite different lines from a combination I have gradually got together for myself, which I find so convenient, and has excited so much interest, that possibly a description of its parts may be useful, or at least suggestive to others who have

found themselves in a crowded hall, and neither lamp nor desk provided, and with a desire to say something better than haphazard remarks, jumbled together after the photograph has been put and well studied upon the screen. To such then as have not the gift of instant fluent speech, well-marshalled ideas, and a memory capable of grasping the exact sequence of, say, 100 slides, these notes are written.

In a lecturer's desk, after efficiency, the first quality is portability. My stand and lamp pack into a narrow bag 24 inches long, and not so wide as a coat sleeve; in fact, the circumference of the package is about 10 inches, and its weight only $5\frac{1}{2}$ lb. It can thus be conveniently carried in an ordinary portmanteau. The woodcut almost explains itself.

The basis of the "desk" is a portable iron music stand, such as may be purchased for about 6s. This stand has three expanding feet, and telescopes within itself; the desk portion also expands by one movement, and may be adjusted at any angle, and is high enough to come to the chin of a man six feet in height; if set higher than the chin the voice is obstructed. I use a railway reading lamp, such as may be purchased at Smith's bookstalls, which has the advantage of small size, but as the candle is contained in a spring case there is the risk of the spring not forcing the candle up, and, during a lecture, should the spring fail to act it would be almost impossible to re-adjust such a candle. A simple Russian-iron box lamp, with a short, hard wax carriage candle set in a loose socket, and having a moveable hood in front, would be preferable. The outside measurement need not be more than 7 in. by 3 in. by $2\frac{1}{2}$ in., the last measurement being that of the open front with hood. The lamp



Z is held in position by an arrangement of rods and screws, such as compose the stand, the sliding-clamp A being fixed at a convenient height by a screw. The hollow rod B is held in position by a second screw at A, and projects behind the stand. The rod C is adjustable to any height by a screw at D, and the upper end fits into a socket in the reading lamp, which may by these rods and screws be adjusted to any convenient position commanding the reading desk. Above the rod BD there is an ordinary chemical retort ring, which is fixed by a screw at E, and which holds a tumbler of water resting on the rod DB. At F there is on the stand a projecting tongue of iron which may be utilised for hanging a watch; to another such tongue at G is fixed, by means of a clamp with ball and socket joint, a convex mirror, so adjusted as to show the screen without the necessity of the lecturer looking round. This mirror gave me a little trouble before a really useful form was attained. I first tried a circular flat mirror. This is of little use if of small size, unless one stands very close to it. There is too little of the screen visible to quickly identify the slide. I next tried a glass evaporating basin. This I found reduced the image so much as to be like the flat mirror—almost useless. I found at last the desired convexity in a crystoleum glass; a circular or oval form, four inches in diameter, will be found most suitable, and it may be silvered on its concave surface and mounted on a plain wooden back, to which a universal joint and clamp is screwed. If the lecture notes

are laid upon the desk, contained in an opaque black cover of full size, and the lamp and stands properly adjusted, with the desk almost perpendicular, the lecturer may move freely about the platform and no lamp light being visible to the audience, the objectionable impression of reading is almost entirely removed. The height of the desk also enables one to keep the head well up while speaking—an impossible position with a low and flat desk—and most necessary if one is to speak effectively to a large audience. As this desk is not perfectly rigid when at its full height, I have had small holes bored near the ends of the legs at K K K, and pass hard whipcord from K K K to M. When this is pulled tight, its effect is like the rigging of a ship's mast, and renders the book as steady as if it lay on a solid wooden desk. At H hangs the "push" from the dry battery portable electric bell (silenced) for communicating with the lanternist, when such is part of the equipment, a sounding desk bell being disconcerting to sensitive people, and the American clicking sounder is not without the same objection. As the last item which the 24 inch narrow bag may contain, a telescoping 24 inch Japanese fishing-rod may be added when a pointer is necessary, the very thin and almost invisible end of which may be rendered conspicuous by being surmounted by a good-sized cork.

With this equipment a lecturer has but two packages to look after—his box of slides. All else is contained in the bag, and that within quite portable compass. The stand may be rigged up in the ante-room, the lamp lighted, and the whole carried to the platform by an attendant as easily as a candlestick. It ought to be set 6 to 8 feet forward of the screen and well to one side. When there is no platform it occupies so little space that wherever there is room for the lecturer to stand there is always the extra 18 inches square necessary for the desk.

The following formula will enable anyone to silver the crystoleum glass for the convex mirror, as such a job is not readily undertaken by mirror makers. The necessary glasses may be had in pairs of some artist colourmen.

SILVERING SOLUTION.

Solution A.—Dissolve 10 gr. crystallised nitrate of silver in 2 oz. of distilled water, and add solution of ammonia till the brown precipitate which forms is almost entirely redissolved.

Solution B.—Dissolve 50 gr. of milk and sugar in 2 oz. of hot water, and add three drops of alcohol.

Mix two parts of A with one part of B, and fill the hollow of the glass, which must have been previously carefully cleaned, with the fluid. The silver is deposited in about an hour, and after washing with water the mirror may be mounted as soon as dry.



A New Telescopic-Photographic Lens.

In a paper read before the Camera Club on Thursday, December 10th, Mr. Thomas R. Dallmeyer gives the following description of the same:—

The object I have had in view, in the lens-construction to which I invite your attention to-night, has been to produce large primary images, of sufficient brilliancy to be of practical value in rapid photography; there are also other advantages, to which I shall refer later on.

Hitherto only two methods of accomplishing the end in view have been employed, to produce large images: first, the employment of very long focus positive ordinary lenses, and, second, the production of a primary image by one positive lens, and

placing a secondary magnifier, or second positive lens, behind the plane of the primary image, which enlarges it more or less, according to its focal length, and its adjustment between the positions of the planes of the primary image, and that of the focussing screen, as in the photo-heliograph, etc.

The first of the older methods has been seldom employed, except in astronomical photography, on account of its unwieldy dimensions, and the second method referred to is practically useless for ordinary photographic work, on account of the great loss of light involved, rendering the length of time necessary for proper exposures so great as to cause it to be almost prohibitive, except for inanimate objects.

The new lens, as you are already aware, is composed of only two elements, and the image given by it is primary and inverted. By the fact of the image being primary and inverted, it looks at first sight, anomalous that for equal extensions of camera, the image given by the new lens is several times larger than that given by an ordinary lens of hitherto known construction.

In comparing two lenses, no matter of what form of construction (when focussed upon a distant object), if the size of the image given by one is n times that given by the other, you are aware that the focus of the one is n times that of the other, provided, as before stated, the images compared are direct, primary, and inverted.

The focal length of a lens is measured, for practical purposes, by the distance between one of the principal planes passing through one of the nodal points of the lens towards the principal focal plane (where the image is received) and that plane.

In most lenses in existence the position of the principal plane referred to can be marked upon the lens-mount, and has already been suggested, first, I believe, by Mr. Warnerke, as an important addition to the measurement and description of lenses, as furnished by opticians. The most recent and important contribution, however, on this subject, was recently furnished by Professor Sylvanus Thompson in a very interesting paper, delivered on the 28th of November last, at the Society of Arts, and published in its Journal. In the case of the rapid rectilinear, for example, the nodal point referred to is not exactly at the diaphragm slot, but a little behind it; but in most lens-constructions in use the nodal point is within the mounting of the instrument.

In some, however, by the accidents of construction, it is slightly behind the lens, as, for example, in certain forms of deep Meniscus, and in others it is slightly in front or beyond the mount, as in Petzval's Orthoscopic. [In last week's *British Journal of Photography*, this construction was referred to in a letter signed "E. Russell." I wish to call attention to the fact, that the object in introducing a negative element, in the Orthoscopic Lens referred to, was for the purpose of the cure of distortion, as its name signifies, although it was not perfectly accomplished, and the nodal point is thrown only slightly in front of the lens-mount, by the accident of construction. Mr. J. Traill Taylor has, I believe, already pointed out that this form of construction necessitated a slight enlargement of the image; but in his leading article in the *British Journal of Photography*, of the 16th of October, describing my new lens, he says: "We have frequently dwelt on the advantages that would accrue from such a construction." The argument in Mr. Russell's letter, however, appears to be the good, chary, old one, "that there is nothing new under the sun."]

Now, the main object of this invention has been to purposely throw the nodal point, from which the focus is actually measured, to any distance I choose in front of the lens itself into space, thus attaining a large direct image, without the necessity of a bulky and long extension apparatus. This, then, is the principle of the construction, and I will now proceed to demonstrate the manner in which it is arrived at, as also point out the possibilities that the construction permits of, qualities that have never existed in any former lens.

The anterior element is a positive lens, preferably of large aperture and short focus; the posterior lens is a negative element of some fractional portion of the focal length of the anterior positive lens (in Petzval's Orthoscopic it was more than twice the focus.) Roughly, the shorter the focus of the posterior lens as compared with that of the anterior lens, the greater is the size (for a given extension of camera) of the enlarged primary image produced.

I have said that the anterior lens should be preferably of large aperture and short focus: it is self-evident, as in ordinary constructions, the larger the aperture the greater will be the rapidity;

and the reason of its being preferably of short focus lies in the fact that the absolute distance between the planes of its own focus for parallel rays on the one hand, and a near object on the other, is, of course, less with a short focus lens than with a lens of long focus.

A similarity between this construction and the Galilean telescope was referred to lately in a French paper, the *Photo. Gazette*, by M. Wallon. This, as I pointed out to M. Wallon, of course, is not so absolutely, in that the rays emerging from the Galilean Telescope are divergent, and not convergent: but by a correct adjustment of the two elements composing the new lens, it can be employed as a Galilean telescope, as I described to Mr. Traill Taylor, in the latter part of September.

Referring to the figure, if the negative lens B be placed at proper distances from the positive lens A, the rays can be made to emerge parallel, divergent or convergent.

For the purpose of forming an image for any given position of the focussing screen, they must be made convergent, producing a direct primary inverted image.

It is immaterial what position may be chosen for the plane upon which the image is to be received: it may be either in close proximity to the posterior lens, or removed to any distance whatever further away; but, in order to focus, it is essential that a correct distance be given between the two elements of the lens itself; in other words, a correct adjustment of their separation, focussing always being most easily and sometimes necessarily accomplished in this manner (fig. 1). For example, supposing the lens were

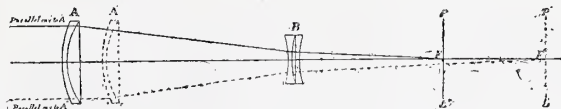


FIG. 1.

FIG. 1.—The upper black ray meets the lens A parallel to the axis, and by a proper adjustment between A and B, comes to focus at F upon the plate P L. If P L be removed further from the lens B to take the position P' L', the lens A will have to be moved slightly nearer to B and take the position A'. The lower dotted line represents a parallel ray falling upon A', which passes through the negative lens B, and coming to focus upon the new position of the plate P' L', at F'.

focussed upon a very distant object—say the sun—with the focussing screen set at a given distance, it would be impossible by any adjustment whatever of the focussing screen to find a plane where the instrument would come to focus for very near objects (fig. 2).

Near objects with the lenses in their former adjusted or fixed position would send the rays from such objects, after passing through the entire lens, divergent and not convergent.

On the other hand, if the separation were adjusted between the two elements for a near object, and it was then pointed towards a distant object, it would be found equally impossible to find any position for the focussing screen, in which the focus could be observed, except as before-stated by an alteration between the separation of the component elements of the lens itself.

It is evident that the longer the focus of the positive element in the construction, the greater would have to be the separation between the two elements for near or distant planes.

In this construction there is then no limit to the size of the image that can be obtained, a slight adjustment in the separation of the two elements producing the correct focus on the screen, be

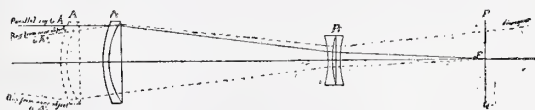


FIG. 2.

FIG. 2.—On the upper side of the axis a parallel ray to A finds its focus as in the dark line on the plate at F. If, however, some ray from a near object falls upon the lens A in the direction of the dotted line, after passing through the lens B, is found divergent, and no positive focus is obtainable. In the lower half of the figure, however, A is presumed to take a proper position in A' when the ray from the near object passing through A' and also through the negative lens B finds its focus upon the plate in the fixed position chosen, at F.

it near or distant from the lens itself; but it must be borne in mind that the greater the separation between the plane of the focussing screen and the lens, the less is the rapidity that can be attained (fig. 1).

I will now call your attention to the question of rapidity. Supposing the screen be placed at a distance of 10 in. from an ordinary lens, and a distant object focussed, say the lens has a focus for parallel rays of 12 in., if the new lens be made to take its place, and the same object be focussed, it will be found that the image produced is five times larger with the new lens than with the ordinary one, you know then that you are practically, and to all intents and purposes, employing a lens of 60 in. focus!

The question naturally asked is, What will be the rapidity? The answer is, that you have to consider the front lens placed at a distance of 60 in. from the focussing screen; in other words, the nodal point is thrown forward outside the lens to a distance of 60 in. from the focussing screen (fig. 3).

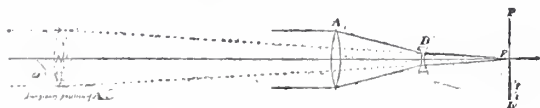


FIG. 3.

FIG. 3.—Represents a beam of rays passing through the two component elements, A and B coming to focus upon the plate P L. To estimate the rapidity it is necessary to consider the full aperture placed at the principal focal plane, passing through the nodal point at N: A is thus made to take up an imaginary position. The position of the nodal changes for different positions of the plate P L.

It is evident to you then that too much stress cannot be laid upon the desirability of large aperture for the anterior positive lens.

In the case cited, supposing the lens to be of 3 in. aperture, you would then be working at an intensity of $f/20$.

In employing this lens, conditions of light will naturally suggest whether it be advisable to employ moderate amplification by having the focussing screen near the lens, the nodal point being thrown moderately forward, or whether the conditions are such as to have a considerable distance between the lens and the focussing screen, and thus throw the nodal point, by the focal adjustment, a long way in front of the lens.

I repeat again that the difference between this and former construction lies in the fact that any focus that one may choose to employ can be obtained from the minimum (dependent upon the ratio between the foci of the elements), when the plate is close to the posterior lens, up to a maximum, controlled solely by the length of the camera extension possible.

As in the case of the telescope, the greater the magnification required, the less becomes the angle included, and there is very little difference with one and the same instrument in the angle included for moderate amplification or great amplification; but, of course, *more of the plate is covered* when it is removed further and further away from the posterior lens.

[The principle employed has a useful bearing on the subject of telescope construction, enabling very much higher powers to be employed on short telescopes.]

I shall feel indebted for any suggestions that may be made by you as to what may be advantageous for any particular applications you may have in view.

With regard to the hand-camera, in which the back lens is, say, 5 in. from the plate, what focus would you like such a construction to represent?

Then, again, for covering larger plates, what is the minimum extension and minimum angle that will be required?

Again, for the sportsman or naturalist, what is about the most convenient length and dimension of plate of box camera, to carry?

It will doubtless be interesting to many to know that the applications of this lens to astronomical photography are easily accomplished, and, moreover, valuable, I think.

The negative of the moon that is before you was taken with the first rough lens I completed, with an extension of only 28 in. I look upon it more as an example of possibilities in size and rapidity of action than definition (that, as you see, I have subsequently attained), although as it is, it has been, I am pleased to say, favourably criticised by persons whose judgments I highly value.

In connection with this instrument, I should like to point out that the optical finish required is necessarily that of the finest polish bestowed upon astronomical work; for, the greater the size of image chosen, the more are any slight optical defects exaggerated.

It is possible that the application of short focus concave lenses, such as myopic spectacle eyes, in connection with rapid portrait

lenses (that in themselves will form the positive elements), will suggest itself to your minds.

Uncorrected lenses in this application will, I may say, cause disappointment; but I am engaged upon the construction of a properly corrected series of negative elements that may be employed in connection with rapid short-focus portrait lenses whose construction and correction I am responsible for, so that many who have practically placed their very rapid short-focus portrait lenses upon the shelf, will now find a new and interesting application for them.

In conclusion, I may say that I have endeavoured, in this new lens, to reduce the bulk, weight, and loss of light to a minimum; and, while thanking you, gentlemen, for the very kind hearing you have accorded me, I hope that you yourselves may perchance find the instrument as interesting in its various applications as its conception and construction have been to me.

Previous to reading his paper, Mr. Dallmeyer exhibited two sets of negatives of distant objects, taken from one and the same point of view, with a 10 by 8 rapid rectilinear lens of 13 in. focus, and the new lens, with the same extension of camera. One set shown represented a church a quarter of a mile distant, and another set representing the Alexandra Palace Station, the distance in this case being estimated at somewhat over a mile. In both instances the images produced by the new lens were five times (linear) greater than the corresponding images produced by the rapid rectilinear lens. Other negatives were also shown; the magnification and fine definition with the new lens was the subject of much comment and admiration by the members present.

To practically illustrate the properties of the instrument, Mr. Dallmeyer had placed two cameras at a distance of about 20 ft. from a small oil lamp, on which were fixed respectively a 15 in. "long focus landscape lens," and the new "tele-photographic lens." It was clearly demonstrated that with equal extensions of camera, the image of the flame on the ground-glass was five times greater in the case of the new lens than in that of the ordinary "long focus" lens; with a greater extension of camera for the new lens the image was very much larger.

In the course of the paper, lantern slides, representing sheep and horses, taken from 250 yards to $\frac{1}{4}$ mile off, were also shown. In the case of the sheep, comparison slides, taken from the same point of view, with a 15 by 12 rapid rectilinear of 20 in. focus, and the new lens were shown, the effect of comparison being very striking. These transparencies represented instantaneous work in dull weather, but were very favourably commented on by the audience. A transparency from a negative of the October full moon was also much admired.

It is interesting to note that in the discussion that followed, Mr. Traill Taylor stated that the idea was by no means new, and he had advocated (*British Journal of Photography*, September 19th, 1873) the construction of a lens to give a larger image with a very limited angle of view. Also in the *British Journal of Photography Almanack* for 1877, page 194, the following passage occurs:—

"A NOVEL ENLARGING LENS.—It may not be generally known that, by means of an opera glass used as a camera objective, a greatly enlarged image of any view to which it is presented may be obtained. Owing to the shortness of the tube, and to the optical principles involved in the formation of a large image by means of an objective when used in conjunction with a concave eyepiece, this form offers advantages in the production of a directly-magnified image not possessed by the ordinary telescope. I have made several experiments with an instrument which, owing to its expense and the niceties involved in its construction, is very seldom manufactured. . . . By means of this instrument I obtained an excellent and sharp photograph of the sun three inches in diameter."

In the September issue of the *Photo. Gazette*, published in Paris, a description of a new tele-objective is given, with the following diagram of its construction:—



This consists, as will be seen, of two tubes, one sliding

within the other, and provided with a rack and pinion for racking in and out. The lens A gives a small image at D, which small image is then enlarged by the ocular B, and gives an enlarged inverted image at E. This objective somewhat recalls M. Cornu's idea of separating the lenses of an ordinary astronomical telescope about $1\frac{1}{2}$ per cent. of the focal length, and then enlarging the image thus obtained. The name and maker of this lens is given as "M. Jaret, fabricant d'objectifs." The illustrations accompanying this article were by an error wrongly given and were corrected in the next month's issue.

In the *Photographisches Wochenblatt* and the *British Journal of Photography*, October 30th, page 702, Dr. Adolf Miethe also writes to state that he has constructed a tele-photographic lens, which appears to have been independently worked out by Dr. Miethe, and in the *Photographische Correspondenz* Eder states that Steinheil was engaged on the same subject. Evidently then several minds have been at work on this subject, and Mr. Dallmeyer has been fortunate enough to patent his construction first.

This new objective is likely, we think, to be of great assistance generally, as by its aid one would be able to obtain enlarged images of objects very distant. In the *Photographisches Wochenblatt* for January 5th, Dr. Miethe gives a collotype reproduction of two negatives, one taken with an ordinary landscape lens, and one with his new tele-photographic lens. The difference in size of the objects is very striking.



The Lantern, and How to Use it.

BY C. GOODWIN NORTON.

CHAPTER VI.

In the optical system of the lantern there are two lenses, or rather two sets of lenses — the condenser and the objective. The work of the former is to collect as many of the rays of light as possible and transmit them through the slide to the latter, which will project the picture on to the screen. Rays of light proceed in straight lines. Their direction may be changed, or refracted, by passing them through lenses; but in changing the direction of the rays we are met with this difficulty; the colours of which white light is composed are not all refracted at the same angle, consequently there is always a coloured fringe to the outlines, especially near the edges of the picture. For practical purposes this difficulty is overcome by passing the light through two lenses of different refractive powers, so that what is called the chromatic aberration of one lens may be corrected by the other. This, in short, is the difference between an achromatic and a non-achromatic lens.

It would be useless for the present purpose to describe the various patterns, and suggested patterns, of condensers put forward by theorists; they are not all in the market, and some of them can only be obtained by having them made at great expense, and even then, for some unforeseen reason, they may not be suitable.

A good condenser should be of short focus, but this brings it nearer to the light, thus increasing the risk of its being broken by the heat from the flame, consequently the lenses of condensers are made of various shapes to get more light through them without putting them nearer than $2\frac{3}{4}$ or 3 in., which is considered a safe distance from the light in careful hands.

The common form of condenser suitable for lanterns with oil lamps, or when showing a large picture at short distance, consists of two plano-convex lenses with the convex sides placed towards each other and nearly touching. Should

the picture require to be shown at a long distance, the face of the lens nearest the light should be concave; this makes it what is called a meniscus.

Dallmeyer's condenser consists of a plano-convex nearest the light, and a bi-convex of unequal curves placed a little distance from it; this gives excellent results, but the price is high—six guineas. Another form of condenser is Mr. Traill Taylor's, consisting of three lenses: a small lens near the light, next a meniscus, and then a double convex. This is also a good form, but the price is necessarily high. One other pattern may be mentioned, viz., a meniscus nearer the light, and a bi-convex having equal curves. This is preferred by some to the second kind mentioned, and is suitable for long focus objectives. Condensers should not be larger than actually necessary, or much valuable light will be lost; a 4 in. condenser is ample for a standard size lantern plate, even if a square mask be used; this usually measures $3\frac{1}{2}$ in. at its greatest breadth. Great care should be taken to secure a clear condenser, free from scratches, streaks in the glass, or bubbles, as any defects are greatly magnified on the screen, especially with the limelight.

The objective should be chosen with a view to get a flat field, that is, the picture should be in focus all over and be free from prismatic colour. Probably, the best style is that of the portrait form, which consists of an achromatic plano-convex in front, with the convex farthest from the light; there are really two lenses here, as before explained, but to outward appearance only one; the back combination has two lenses separated by a short space; the one nearest the front is a meniscus with the convex side toward the front, and a bi-convex of unequal curves, the flatter of the two, nearest the light.

This description of the lens is given in detail in order that, when taken to pieces for cleaning, the operator may put them together properly; if not correctly placed, the picture will suffer. A lens of this description, 6 in. focus and upwards, ought to give a nearly flat field.

Sometimes a single plano-convex, or a meniscus achromatic lens is used; and by combining two or three, say one of 8 in. with one of 10 in. to produce a $4\frac{1}{2}$ in. focus, a larger picture can be got at short distance than with a portrait form, but it is not so flat and is suitable only for showing portraits, or the old hand-painted slides, where the lines were seldom straight.

When, however, a lens of very long focus is required, a single achromatic answers the purpose nearly as well as the more expensive portrait form, provided it be of sufficiently large diameter to take all the rays of light. A single lens of 12 in. focus should be at least 3 in. in diameter. To find the equivalent focus of two single lenses used in combination, multiply the focal lengths of the two lenses, and divide the product by the sum of the two focal lengths, thus $8 + 12 = 20$, $8 \times 12 = 96$, $96 \div 20 = 4\frac{3}{5}$ nearly.

Another way commonly used, but by no means accurate: divide the sum of the focal lengths by 4 thus: $8 + 12 = 20 \div 4 = 5$. With this form of objective a stop must be used in front of the lens to get good definition; this excludes part of the light. With a portrait lens a stop is not generally used.

There has been much controversy as to what is the most suitable size of lenses for the objective. Those for short distance are generally made back combination 2 in., front $1\frac{3}{4}$ in. in diameter, but when the focus is lengthened it is usual to increase the diameter, sometimes to as much as $3\frac{1}{4}$ in., but this makes the lenses expensive, the other parts of the lantern having to be made heavier in proportion. There is an undoubted gain of light by having the long focus lenses larger than 2 in., more especially if the tube used is sufficiently large to take the whole cone of rays

coming through the picture; but whether the extra expense of having objectives the same size or larger than the slide is compensated by the gain of light is a question not yet definitely settled. The prices of condensers and objectives differ very much, without any apparent corresponding difference in quality. As some guide to the price: Good condenser, double plano-convex, 4 in. in diameter, mounted in brass cells, ready for use, can be purchased for 10s. 6d. Meniscus ditto for long focus, about 15s. Objectives of portrait form, with rack and pinion, 12s.; better ditto, with 2 in. back combination, 18s.

The larger sizes are of course dearer: $2\frac{3}{8}$ in. diameter, 63s.; $2\frac{5}{8}$ in., 84s.; $3\frac{1}{8}$ in., 105s. In the better kind of lantern fronts the lens tube is quite separate from the rackwork mount into which it slides. This is done to avoid having to unscrew anything when changing a lens of one focus for that of another.

Messrs. Chadburn, of Sheffield, make an exceedingly convenient form of lantern front. The tube holding the lens slides into another one, to which the shutter is fixed; the two are then placed in the rackwork mount. By this means the extra lenses for varying distances can be packed into the smallest compass when not in use, and only one shutter is required for each lantern front.

Messrs. Noakes' quick-changing objective is a very good form of lantern front, and the shutter attached to it is especially adapted for dissolving on an effect.

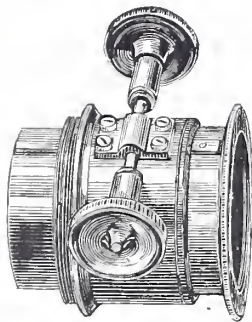


FIG. 10.

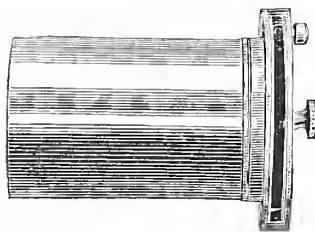


FIG. 11.

Another pattern to be recommended is that sold by all dealers, and generally described as "interchangeable objectives." The lens of each objective is mounted in a brass cylinder or tube, having a sliding shutter attached with grooves to carry coloured glasses for tinting the picture. This slides into the rackwork front, so that the lenses can be instantly changed without unscrewing.

These cylinders can be purchased as required, as they are all made to one gauge. The lenses range in focus from $5\frac{1}{4}$ to $12\frac{1}{4}$ in., and are made of diameters varying from 2 in. to $3\frac{1}{4}$ in.

There are two kinds of rackwork adjustment for lenses. In one case the pinion held in position by a saddle and four screws forms a tangent to the circle of the lens. In the other the rackwork is inside the tube, and the pinion is a continuation of a diameter. The latter is the better, the rack being less liable to stick or strip.

Some objectives screw into the front. It is often difficult to start the threads, and there is always a liability to cross them; this may be partly obviated by cutting away the first thread on the external screw, it is then much easier to make a start.

To ascertain the focal length of a single lens, focus sharply a very distant object on a white surface; the distance between the image and the nearest face of the lens, though not theoretically correct, may be taken as the focal length. With a portrait lens proceed as before, holding the

front nearest the source of light; the distance between the image and back lens is what is termed its "back focus." To get the "equivalent focus" the whole lens must be reversed, and measurement again taken from the same point, *i.e.*, the face of the lens farthest from the image; half the sum of these two distances gives the equivalent focus.

The equivalent focus is the one used in making calculations respecting size of disc or distance between lantern and screen. The back focus is only required to determine the distance between the slide and the objective.

What is the most useful length of focus for an objective? This depends upon the purpose for which the lantern is required. If for use in a private house, or to show a few friends the result of one's skill with the camera, a quarter-plate or lens of $5\frac{1}{4}$ in. focus is suitable, or if the room is large, 6 in. focus would be better. Remember the longer the focus of the lens, the flatter will be the picture.

To ascertain the size of picture when the focus of the lens and distance from the screen are known; or what distance is required for a lens of certain focus to project a picture a given size; or to find the focus of a lens which will produce a picture the required size at a given distance, is a matter of simple proportion.

Let A be the diameter of the slide.

Let B be the focus of the lens.

Let C be the size of picture.

Let D be the distance between lens and picture.

When any three of these are known, it is easy to find the fourth.

Place those quantities known under its proper letter; multiply the two outside numbers together and divide by the inner one, or multiply the two inner and divide by the outer one, the result will give the fourth thus:

$$\begin{array}{cccc} A & B & C & D. \\ 3 & 5 & 24 & 40. \end{array}$$

A and B represent inches, C and D feet. This will be easy to remember, or this table, which may be pasted with the other given on page 435 (December 11th, 1891), will show at once the unknown quantity.

Approximate Table of Distances between Objective and Screen for Slides of 3 in. diameter.

Equivalent Focus of Lens in inches.	Diameter of disc in feet.										
	5	6	7	8	9	10	12	14	16	18	20
	Distance between Objective and Screen in feet.										
5	8	10	12	13	15	17	20	23	27	30	33
6	10	12	14	16	18	20	24	28	32	36	40
8	13	16	19	21	24	27	32	37	42	48	53
9	15	18	21	24	27	30	36	42	48	54	60
10	17	20	23	27	30	33	40	47	53	60	67
12	20	24	28	32	36	40	48	56	64	72	80

In this table the discs given are the usual sizes of screens.

The equivalent focal lengths of lantern lenses are $5\frac{1}{4}$, 6, 8, 9, $9\frac{3}{4}$, $12\frac{1}{4}$ in. To make it as simple as possible, fractions are omitted and the nearest whole number given. When exhibiting in a public hall a long-focus lens should be used, otherwise the lantern being placed at a short distance from the screen will much inconvenience those in the front seats, and obscure the view of those immediately behind.

A lens of 9 in. equivalent focus will be found the best if only one be purchased; this will give a 15 ft. picture 45 ft. from screen.

(To be continued.)

ILLUSTRATED SUPPLEMENT,

JANUARY 15, 1892.

Monthly Competition, No. 31, "Seascape and River Scenery."



I believe that very many of our competitors will much appreciate this new departure. Necessarily the criticism of photographs will be brief; as a rule from four to six of the prints contributed will be reproduced, and it is proposed at the end of the year to publish an Album of the Prize Pictures, reproduced in Woodbury-gravure or other permanent process; particulars are attached to the entry forms, and date of publication, etc., will be announced in due course.

BALLANTYNE, THOS. (Glasgow).—"Troubled Waters:" this photograph, which we reproduce (No. 1), was awarded the First Silver Medal. The picture was taken with a camera and shutter of Mr. Ballantyne's own manufacture, and with a 1/1 single lens, bought at a broker's shop for six shillings. There is no need for us to comment upon the definition of the lens, or the selection of subject, as both are clearly shown in our reproduction.

BROUGHTON, MISS ELEANOR (London).—"A Spring Evening:" the plate was given too long an exposure (short cap). A better result may be obtained by more careful printing. We cannot recommend the use of a combined fixing and toning bath. We also regret that Miss Broughton has been so careless in mounting her print. The object of these Monthly Competitions is to encourage workers in photography to send in their best work, and it is useless to compete unless every care has been taken by the competitor to do his or her best.

GILBERT, B. W. (Birmingham).—"On the River Lyn:" this photograph shows care in selection, but is rather flat. The accentuating of the foreground would have given the effect of distance. In the picture before us Mr. Gilbert has taken a point considerably past the middle distance as his focussing centre. He used an R.R. lens, smallest stop, and gave 3 sec. exposure, in June, to an Ilford extra rapid plate.

GRACE, MRS. C. S. (St. Andrews).—"On the Orchy, Dalmally:" this photograph is very weak, printed on Jacoby's printing-out platina paper. The selection has some merit, and

had the bushes lying in the stream been more carefully focussed the foreground would have been well broken up. Possibly Mrs. Grace might secure a better print on silver paper. An R.R. French lens was used, $f/16$, and $1\frac{1}{2}$ sec. exposure given to an Ilford plate, in July, at noon.

JONES, G. J. (Malton).—"At Oie, Norangford:" this photograph, which was taken from a bedroom window, is a good panoramic view, rather under-exposed, and lacking contrast. A Ross' R. R. was used, $f/32$, and 3 sec. exposure, given in August at 8 a.m., to an Ilford ordinary plate.

BATTY, ARTHUR C. (Liverpool).—"A Bend in the River:" this photograph had a familiar look, and we find that, under the title "Clearly the Blue River Chimes in its Flowing," an enlargement was sent in to Competition No. 28, which was duly



No. 1.]

TROUBLED WATERS.
(FIRST SILVER MEDAL.)

[Thos. Ballantyne.

criticised in the October issue of the *Photographic Reporter*. The selection and composition are good, the ungraceful figure slightly marring what would otherwise be an excellent photograph. It was taken with a Beck's R. R., 8 by 5, $f/16$, and 4 sec. exposure given on a dull day in August, at 11 a.m., to an Ilford plate. The print is on Eastman's bromide paper.

GLADSTONE, W. (Bo'ness).—"Breakers:" a very good study of sea and sky; the breaker is dashing against a rock, and the

boiling foam has motion thoroughly represented. It was taken on an Ilford plate, with a Dallmeyer triplet lens, $f/16$, shutter exposure, Thornton Pickard's, in July.

WILLEY, WALTER (Louth).—"The Thames, Richmond:" this photograph is rather a narrower view on a quarter-plate. The technical work is well done, and is another testimony to the good teaching the members of the Louth and District Photographic Society have had; taken on a "Castle" plate, with Lancaster's Instantograph, $f/20$, 2 sec. exposure, in September.

SWIFT, CHAS. A. (Sedburgh).—"The Clinch Bridge:" this photograph has been roughly handled, and was received badly broken. No interest attaches to the view, and the printing has been carried too far. An R.R. lens was used, $f/11$, and 1 sec. (under-exposed) given to a Kingston Special plate, in October.

SAMPSON, EDWARD (Beauchief).—"Pont-y-Pair:" we understand that this picture is from one side of a stereoscopic negative. No doubt in the stereoscope the two figures stand out well, but we should say that for the rest of the picture the shadows were too deep. A Wray's R.R. lens, 15 in. focus, $f/16$, was used, 1 sec. exposure being given to a Wratten plate, at the end of September.

MAUGHAM, W. (Sheffield).—"Bridge on the Derwent:" a well selected spot with rocks and foliage; toned rather dark with the borax bath. The exposure (43 sec.) was necessarily long, using a doublet lens, $f/32$, at 5.45 p.m., on a dull day in September.

THIRKELL, LEO (Bermondsey).—"Shillingford:" a quarter-plate print from a dense negative on an Ilford ordinary, printed on the new Ilford paper, but carelessly toned with sulphocyanide of ammonia.

PERKINS, REV. T. (Shaftesbury).—"Sunlight on the Sea, Sidmouth:" doubtless a pretty picture on the focussing-screen, but a poor and uninteresting photograph. Taken with a Wray R.R. lens, $f/23$; 1 sec. exposure given in October to a Marion's Britannia plate.

FERGUSON, W. R. (Newcastle-on-Tyne).—"Looking down the River Tees:" a most admirably selected picture, well broken up with light and shade; the print has every good quality of a platinotype, but is on Eastman's A bromide paper, from a negative on an Ilford ordinary plate. An R.R. lens working at $f/16$ was used, 1 sec. exposure being given in July.

BENNETT, REGINALD A. R. (Oxford).—"Babbacombe Bay:" a very carefully chosen point of view, taken with an Optimus R.R. lens, $f/32$, 4 sec. exposure being given to a Thomas's extra rapid plate in the middle of August, at 1.30 p.m.; printing has been carried a little too far on Aristotype paper; toned and fixed in the combined bath.

BASTARD, W. E. P. (Heathfield).—"On the River Tamar:" the plate, a Thomas thickly-coated, was rather over-exposed, 3 sec. being given on a bright day in June, at 3 p.m., with a single lens, full aperture. There is no life in the river, and the photograph was too evidently taken in order to secure a portrait of a young lady in the boat moored to the bank.

COUCHMAN, H. A. (Maidstone).—"Little Malta:" the only point in focus in this picture is the window of the cottage across the stream. A great feature seems to have been made of this, and a boat and its occupants alongside of the bank are blurred. An Optimus lens, $f/16$, was used, and 3 sec. exposure given at 3.30 in July to an Ilford plate.

MATTHEWS, J. R. (Carlisle).—"Rest, Corby Ferry:" a print from a Britannia quarter-plate, with no merit as a composition and faulty toning.

ΕΥΜΟΡΦΟΠΟΥΛΟΣ, E. (London).—"Footsray, Kent:" in this picture the tall poplar is too central in the composition, and being printed heavily on bromide paper, attracts the eye from the other points in the photograph. A Dallmeyer R.R. lens, $f/5$, was used, and a shutter exposure (Caldwell's) given in September to a Wratten's drop-shutter plate.

RICHARDSON, S. G. (Tranent).—"Falls of Bruar:" this photograph sadly lacks detail, and the plate is much under-exposed, an R. R. Optimus lens, $f/16$, was used, and 1-16th sec. exposure given at 1 p.m. in August. The print is on "Alpha" paper, exposed two minutes before an oil lamp, and developed with hydroquinone.

MOFFATT, W. TODD (Aberdeen).—"River Dee at Dinnet:" this is a very fair photograph of a suspension bridge, with three figures interested in the actions of the operator, but it has no pretensions to being a composition; the detail of the banks of the river is sacrificed entirely to the bridge. A Lancaster's Instantograph, $f/22$, was used, and 6 sec. exposure given on a dull day in September, 4.25 p.m., to an Ilford plate.

JARDINE, GEO. C. (Stamford Hill).—"A Rough Corner, Dorsetshire:" this competitor has secured an admirable sea piece, with life and motion, the dark tones of the rocks, and the white foam being well rendered on bromide paper. The foreground would have been the better had it been more sharply focussed. An Optimus R. R. lens, $f/12$, was used, and an instantaneous exposure given, in September, 3 p.m., to a Paget xxx. plate; the print is on Ilford slow bromide paper.

BRIGHT, STANLEY C. (Genoa).—"Isola Ferry, River Oglio, Lombardy." In this photograph too much has been attempted for the limits of a half-plate. The grouping is good, but the figures are so small as hardly to be discerned. An Ilford plate was exposed for 1 sec., at 3 p.m. in September, a Lancaster's Instantograph, $f/30$, being used. The print is on Alpha paper developed with hydroquinone, toned and fixed in the Alpha combined bath; a good colour has been secured.

FRANCE, H. RICHARD (Hampstead).—"Denham Bridge:" a pretty picture from an Ilford quarter-plate, printed in "Celotype," which has been toned rather deeply. The photograph was taken with Wood's quarter-plate set, which is sold complete for £2 10s.

PAYNE, ALBERT H. (Brockley).—"The Mole, near Dorking:" the plate, Thomas's extra rapid, from which this print was taken, was under-exposed. A single lens, $f/32$, was used, and 3 sec. exposure given at the end of August at 4.30 p.m. The print is flat and lacks contrast. Eastman's extra rapid bromide paper was used, developed with ferrous oxalate.

RUDGE, ARTHUR H. (Tettenhall).—"At the Close of the Day:" a most admirable composition, but unfortunately from an under-exposed plate. The print, on Aristotype paper, is toned with the sulpho-cyanide of ammonia and borax bath mixed; a colour, reddish-brown, being secured that does not, in our opinion, suit the composition; such a picture should have been printed in a soft grey. A Lancaster's Instantograph was used, and 3 sec. exposure at the end of September, 5.50 p.m., to a "Castle" plate with stop $f/24$.

NYE, HUBERT (Clapham).—"Sea Study, Bognor:" an excellent study of waves and foam, taken on an Ilford plate, with a Lancaster's Instantograph, $f/10$, shutter exposure. Good values have been obtained with Ilford bromide paper developed with ferrous oxalate.

WEST, GEORGE (London).—"Under Repair:" the negative, on an Ilford plate, received only 2-5ths sec. exposure with a single lens, $f/22$, at midday in September, and is considerably under-exposed. The selection of point of view is well chosen.

THOMPSON, J. (Burton-on-Trent).—"Salmon Leap on the Dove:" this is a print from another under-exposed Ilford plate; the scene is not well chosen, and the silhouette of a man in the foreground takes from the picture any merit that it possessed. A single landscape lens was used, $f/30$, and 5 sec. exposure given at 3 p.m. on the last day in October.

HUNT, MISS C. (Reading).—"Yachts off Ryde, Evening:" a snap shot taken with Lancaster's quarter-plate camera, at 6.30 p.m., single lens, $f/20$, on a Thomas's extra rapid plate. A

moment's consideration should have satisfied this competitor that on a dull day even in August, at half-past six in the evening, a snap shot could but result in a spoilt plate.

IRVING, HENRY (Darwen).—"By the Waters of Quietness:" in this photograph we have a peaceful scene, the title of which is prompted by a study of the 23rd Psalm. The spot is chosen with much care, and the whole scene faithfully bears out the title. An Ilford plate was exposed for 2 sec., in June, at 2 p.m., with Lancaster's Rectigraph lens, working at $f/30$; the print is on Obernetter paper, squeezed on to ground-glass. Mr. Irving's contribution, for which he was awarded the Second Silver Medal, is reproduced (No. 2).

WISE, WILLIAM (N. Cadbury).—"River Teign:" a very well selected picture. The bridge, a white patch, is a fault too central on the plate. The print, platinotype, might with advantage be a little deeper. Wray's R.R. lens, $f/32$, was used, $1\frac{1}{2}$ sec. exposure being given to an Edwards' special landscape plate at 12 noon in September.

CASAR, J. (Twickenham).—"Richmond Bridge:" this photograph is the generally accepted view of Richmond, and is about up to the majority of commercial photographs. It was taken with an R.R. lens, $f/11$, on an Ilford ordinary plate, an exposure being given of 2 sec., at 4.30 p.m., in September.

CAMPBELL, HENRY W. (Glasgow).—"On the River Cart:" the interest in this view entirely depends upon the rendering of the falls, and in the photograph before us they are hardly discernible. An Ilford plate was exposed at 2 p.m., in the middle of November, on a damp, hazy day, for 6 sec., with a Dallmeyer W.A. lens, $f/22$; as a consequence the plate is much under-exposed.

BORLEY, ALEC (Clapham).—"The Basin, Ramsgate Harbour:" care has not been taken in the composing of this photograph; the parts of vessels in the foreground detract from the picture. An Optimus R.R. lens, $f/32$, was used, and 2 sec. exposure given, at the end of August, to an Ilford ordinary. The print has been carefully made on bromide paper, Ilford slow rough.

SPILLER, A. L. (Hampstead).—"On the River Gryffe, Bridge of Weir:" this view has been most carefully selected, and the swirl of the water as it rushes down over the rocks has every sign of life and motion. It was taken with a Lancaster Instantograph, $f/22$, 2 sec. exposure being given, at noon, in August, to a Marion's ordinary plate. The print is on gelatinohydrochloride paper.

HINSHELWOOD, N. M. (London).—"Babbacombe Beach:" this is a bromide print from an Ilford plate, taken with a

Wray's R.R. lens, $f/11$, an exposure of 5 sec. being given, at 3.50 p.m., in July. View is well chosen, and the printing very carefully executed.

MAITLAND, VISCOUNT (Lauder).—"River Leader:" this photograph shows an extensive stretch of landscape, with the stream rushing through. The foreground is broken up by stile, fence, and swinging hurdle across the stream; the values are well given in a platinotype print. A 10 by 8 R.R. lens was used, $f/22$, and $\frac{1}{2}$ sec. exposure given to a Carbutt's film, in the middle of August, at 1.30 p.m.

WEIR, W. R. (Rickmansworth).—"Temple Lock, near Marlow:" in this photograph we have too much foreground;

the lighting has not been well considered; there is but little detail in the shadows, and the best is not made of one of the most charming spots on the Thames. A Taylor and Hobson R.R. lens, $f/22$, was used, and 20 sec. exposure given in September on a cloudy day at 5.20 p.m. to a Thomas thickly-coated plate.

DAVIS, THEODORE, M.D. (Cleveland).—"The Lord of the Isles:" a good composition, but a very poor print from, we should say, an under-exposed negative. We should very much like to see a better print, which may be quite possible with more carefully printing. A Kodak No. 4 was used, $f/16$, at 11 a.m., and an instantaneous exposure given on a cloudy day in September to an Eastman's film.

BATEMAN, H. (York).—"Pilot Boat leaving Ramsgate:" in this picture the boat and lighthouse are too central, and the lighthouse looks as though it were being carried on board the pilot boat. There is no merit in the composition; the technical work is very fair, but the print on Aristotype paper is too pink. A Wray's lens (new series) was used, $f/16$, and an exposure of 1-20th sec. given



No. 2.]

BY THE WATERS OF QUIETNESS.
(SECOND SILVER MEDAL.)

[Henry Irving.]

to an Eastman film.

COOPER, MISS B. (Reading).—"Southampton Breakwater:" a very fairly chosen view, rather wanting in detail, taken with a Beck's R.R. lens, $f/22$, 4 sec. exposure at the end of October being given to a Thomas's thickly coated plate at one o'clock.

FOWLER, GEO. R. (Forfar).—"Gannochy Bridge:" a carefully selected peep of scenery on the Esk. The picture is well balanced, and good values secured in a platinotype print. Thirty seconds exposure was given to an Ilford White Label plate, at 5.30 p.m., in August, with an R.R. lens working at $f/32$.

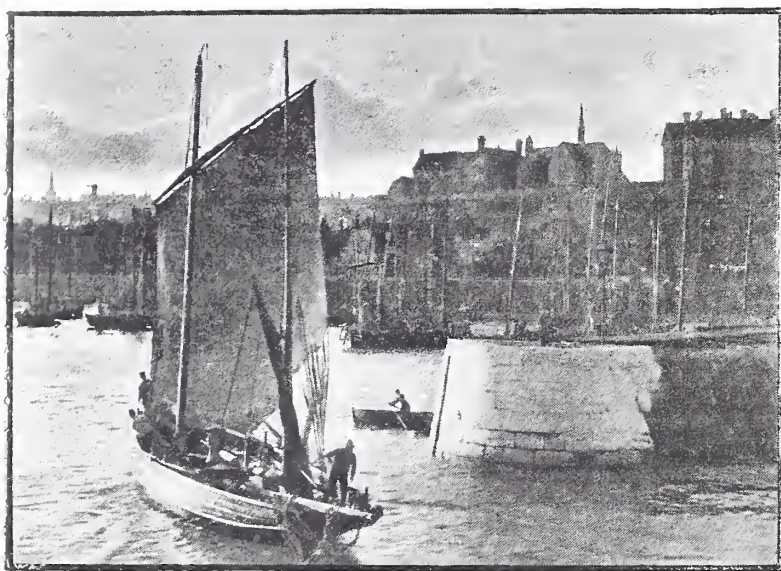
MAY, CHARLES R. (Clapham).—"A German Ferry:" this photograph would have been improved had an inch been taken off the foreground; the distance is hazed off rather too much;

the composition generally is good. The print is admirable on Eastman's C bromide paper developed with ferrous-oxalate. A Swift portable Paragon lens, 12-in. focus, U.S. 16, was used, 1 sec. exposure being given in the middle of October, at 10.35 a.m., to a Thomas thickly-coated plate.

BATTELL, W. J. (Walthamstow).—"View on the River Lea:" in this picture we have an uninteresting foreground, and a want of detail in the shadows; the photograph was taken in strong sunlight, and as a consequence the shadows are very heavy. A Thomas extra plate was used, and an exposure of 5 sec. given with an R.R. lens, $f/24$, at 6 p.m., in September.

KEOGH, J. M. (Dublin).—"Near Donnybrook:" this is an early morning scene, taken at 7.30 a.m., and a good effect is secured by the sun just piercing through the mist. The foreground has no very strong point, and the mist makes the picture. It was taken on an Ilford ordinary plate, with Taylor's lens, $f/22$, an exposure of 12 sec. being given early in September. The print, in which the soft haze is finely rendered, is on Ilford gelatino-chloride paper.

DAVIDSON, W. N. L. (Kensington).—"Ventnor:" a pretty



No. 3.]

BACK FROM THE FISHING GROUND. [Frank W. Kent.
(FIRST BRONZE MEDAL.)

little quarter-plate view on Eastman's bromide paper, with signs of working upon it with a pencil. Taken in a Shew's Eclipse camera on a Paget xxxxx plate.

GOLDING, ARTHUR J. (Tufnell Park).—"Going Out to Sea:" the print has been cut down out of all proportion, and, for the want of foreground, the tug with vessels in tow is dreadfully dwarfed. A Thomas' extra rapid plate was used, and a drop-shutter exposure given with Beck's R.R. lens, $f/16$, at 10 a.m., in August.

BAILEY, JOHN R. (Kensington).—"The Shaded Pool:" this is a view of the East Lyn. The selection is fairly good, but owing to the long exposure, 23 sec., the water in the foreground is quite devoid of life; less foreground and more sky would have improved the picture greatly. A Wratten instantaneous plate was used, with R.R. lens, $f/32$, the exposure being 23 sec. in bright sunlight, in the middle of August.

ROW, F. W. (Marlow).—"Marlow Weir:" this competitor has not got the best view of the Weir, and has included too much upon his half-plate. The print, on Ilford bromide paper, is clogged in the shadows. A Lancaster's R.R. lens was used, $f/12$, and an instantaneous exposure given to an Ilford rapid plate, at 11 a.m., in October.

PATERSON, ALEX. G. (Barnsley).—"River Don at Spotbro:" a little more attention to focussing in the near foreground would have improved this photograph, which was taken with a Wray R.R. lens, $f/22$, 2 sec. exposure being given in May, at 4 p.m., to an Ilford ordinary.

HUGHES, T. J. (Woolwich).—"At the Mouth of the Lyn:" a carefully composed picture, rather overprinted on Obernetter paper. A Steinheil Antiplanat lens, $f/8$, was used, and 1-10th sec. exposure given to a Paget xxxxx plate, at noon in August—rather under-exposed.

STONE, MISS E. GRAHAM (Willesden).—"The River Braan, Dunkeld:" in this picture the point of view is carefully chosen, but the fallen tree, which is slightly out of focus, in the foreground, attracts attention. The print is on Aristotype paper, from an Ilford ordinary.

KENT, FRANK W. (Clapham).—"Back from the Fishing Ground:" this class of picture has been made familiar by such workers as Sutcliffe, Beck, Smart, and others. Mr. Kent, whose print is reproduced (No. 3), has composed his picture with much care; the distance is printed a little too deeply, but in the foreground we have soft half-tones, and good results of light and shade. Mr. Kent was awarded the First Bronze Medal. He worked with an Optimus R.R. lens, $f/16$, at 5 p.m., in August, and gave an exposure of 1-40th of a sec. to a Paget xxxxx plate.

BRANDRETH, BENJ. (Hoylake).—"The Tail of Tyn-y-Cae:" this is a spot well known to salmon fishers on the Conway. The print is flat, with very little contrast, and no detail in the shadows; the foliage wants crispness. An R.R. lens, $f/16$, was used, and 3 sec. exposure given to a Paget xxx plate at 11.30 a.m., in October.

DUDIN, JAMES (Enfield).—"Off Greenwich:" a typical riverside scene carefully composed, taken on an Edwards' Isochromatic plate, with an R.R. lens of $8\frac{1}{2}$ inch focus, $f/14$, 1 sec. exposure being given in September at noon.

SAVAGE, WARWICK (Burslem).—"Down the Stream, Bettws-y-Coed:" not a single point in this photograph is in focus. The selection of point of view has not been well considered. It might be possible to secure a better print in silver, the bromide print is weak and flat. Mr. Savage has good tools, and if he will carefully study one of the many excellent handbooks on photography it will not be long before he produces better work.

GAPE, REV. CHARLES (Scole).—"On the Waveney:" the photograph is good technically, but the lighting is very faulty, the shadow of a large tree falls direct into the lens. In the early morning, we have no doubt, a beautiful picture would be secured; at 2 p.m. it is quite spoilt by the shadows. A Lancaster's Rectigraph was used, $f/20$, and 1 sec. exposure given in September, at 2 p.m., to a Thomas's extra rapid plate. The print is on Celerotype paper.

BIBBY, W. H. (Blackburn).—"On the Ribbie:" this is a print from an under-exposed negative on a Thomas's extra rapid plate. The view appears to be carefully selected, but is quite spoilt by under-exposure, $\frac{1}{2}$ sec. being given at 3.30 p.m. in July, with an R.R. lens, $f/16$.

KINGSFORD, R. L. (Cambridge).—"Dungeon Ghyll:" more wasted energy. This competitor has spoilt his photograph by endeavouring to take the portrait of two ladies crouched on the rocks; no other point is in focus. A Shew's Eclipse, $f/20$, was used, and 3 sec. exposure given at 2 p.m., in July, to an Ilford ordinary plate.

WHEATLEY, R. A. (Oxford).—"River Rothay, Sedburgh:" not a view of any particular interest. The foreground is not in

focus; it should have been and so helped the vista. A Lancaster's Instantograph was used, $f/16$, and 5 sec. exposure given at 10.45 a.m., to a Britannia ordinary plate.

BURY, MRS. GAYNOR (Bayswater).—"The River Jed:" this picture would have been greatly improved had the foreground been sharp, the flowers upon the river bank would then have made a pretty setting to the picture. There is a want of depth in the distance, and the whole print is flat, from an under-exposed negative. The lens, a Dallmeyer's R.R., $f/16$; $\frac{1}{2}$ sec. exposure being given to an Ilford ordinary plate at 11.15 a.m. in October.

MASON, WILLIAM (Rotherham).—"Conisboro':" in this photograph there is too much foreground. The shadows have no detail in them. The lens, an R.R., has not fully covered the plate, Barnet.

WIGHTMAN, GEO. JOHN (Lewes).—"Rocky Heights that Overlook the Breadth of Ocean:" a well-chosen view and a careful print on Morgan and Kidd's bromide paper, from a Paget xxxxx. plate. An instantaneous exposure was given with a Taylor's R.R. lens, $f/10$, at 3.30 p.m. in the middle of June.

HOLT, HARRY (Liverpool).—"Ferry Nab, Windermere:" this competitor is, we know, particularly jubilant at having been awarded the Second Bronze Medal. The photograph is reproduced (No. 4), and our readers can therefore judge of Mr. Holt's powers of selection and composition. For this picture he used a Wray R.R., $f/32$, and gave 6 sec. exposure, at noon, in May, to a Wratten's instantaneous plate; his print is on gelatino-chloride paper.

WORSLEY, FREDERIC S. (Old Charlton).—"Sunbury Lock, Thames:" the composition of this picture is distinctly good, but it is to be regretted that a heavy shadow should fall across the boat in mid-stream; much detail is lost from the same cause. The print is admirable, on Morgan and Kidd's bromide paper. The plate, "Phoenix," was under-exposed with Thornton-Pickard shutter, 1-5th sec. in September. Taylor, Taylor, and Hobson's R. R. lens was used, working at $f/22$. The print was developed with eikonogen and carbonate of soda.

LEACH, THOS. (Smallbridge).—"On the Conway:" the lens has not covered one side of the plate; the operator was too intent on getting in his distance, and neglected the immediate foreground. A "Manchester" plate was used, and an exposure of $1\frac{1}{2}$ sec. given in August, with a Wray's R. R. lens, working at $f/16$; the print is on gelatino-chloride paper.

RHODES, MISS LOUISA (Hastings).—"Cliff End:" an extensive coast view without any particular point of interest; technical work is good. A Beck's R. R. lens was used, $f/16$, 3 sec. exposure being given in August, 4 o'clock, to a rapid Ilford plate.

BEAMAN, DEP. SURG.-GENERAL A. H. (Bedford).—"Winter on the Banks of the Ouse:" this competitor has sent in a platinotype print which fully bears out the wintry season; the immediate foreground in the photograph is uninteresting. A single landscape lens, $f/40$, was used, and 17 sec. exposure given to an Ilford ordinary plate, in February, at 1 p.m.

BURY, HENRY (Bayswater).—"Cluny River, Braemar:" a charming little quarter-plate view, but the lighting not well considered; a little more care in focussing to the edge of the plate would have helped the picture, which was taken with a Shew's "Eclipse" camera, $f/10$, 1-30th sec. exposure being given at 4 p.m., in September, to a Lumière plate.

GEAR, JOHN H. (London).—"The Swan on still St. Mary's Lake:" a very poor photograph, in which the interest is

centred on two swans, one with a neck and one without; to secure them the foreground is neglected, and no attention has been paid to the composition of the picture. An Optimus Euryscope lens was used, $f/8$, and 1-40th sec. exposure given to an Edwards' instantaneous plate.

LUCIO, MRS. M. (Portugal).—"Bridge Espinho:" care has not been taken in regard to lighting, heavy shadows spoil the picture, which was taken with a Ross' R. S. lens, $f/8$, and a slow shutter exposure given to a Wratten's drop-shutter plate at 6.30 a.m., in July.

SHARLAND, REV. G. F. (Thurlow).—"Margate, 1891:" this is a pretty little seaside picture, with figures in silhouette, printed very carefully on bromide paper, taken with a single lens, Lancaster, $f/11$, cap off and on, in July last, about 11.30 a.m.

BROWN, DUNCAN (Pollokshields).—"On the Cart:" there is a much too extensive and uninteresting foreground in this photograph; ugly shadows are thrown across the stream. The print is on a pink paper; the plate, Ilford ordinary, was under-exposed on a "very dull and foggy day," in the middle of



No. 4.]

FERRY NAB, WINDERMERE.
(SECOND BRONZE MEDAL.)

[Harry Holt.

November, 5 sec. being given with a Dallmeyer's whole-plate lens, working at $f/20$.

DAVIS, C. H. (Richmond).—"The Beggars' Bridge, Eskdale:" in this photograph one inch less of foreground would have improved the picture. The foliage shows considerable movement. A Suter's R. R. lens, $f/23$, was used, 4 sec. exposure being given, at the end of July, "in a gleam of sickly sunshine between showers," at 3 p.m., to a Thomas's thickly-coated plate.

JAMES, A. (Barry).—"A Devonshire Stream:" in this photograph not sufficient has been made of the rushing water in the foreground; the distance has received all the attention, with the result that detail on the side of a very distant hill is rendered far more sharply than rocks and stream in the foreground. A Ross R. S. lens was used, $f/16$, and 3 sec. exposure given to a Thomas's extra rapid plate, at 6 p.m. in July.

MILLAR, ALEX. (Newtyle).—"A Scotch Burn:" this competitor shows care in selection, but his print on bromide paper is clogged in the shadows and with no half tones. He used an Ilford plate, and gave a quick hand exposure with a French lens working at $f/16$, in the middle of June.

BRIGHTMAN, C. A. (Bristol).—"Frwdgrech Waterfalls:" a little careful attention to lighting will bring this competitor forward. The photograph shows much care in selection and focussing; it was taken with lens working at $f/22$, 3 min. exposure being given (the falls are overhung with rocks and foliage), at 4 p.m. in August, to a Thomas's extra rapid plate.

BIRKBECK, J. T. (London).—"The Ouse at Bedford:" this print is from an under-exposed negative on an Ilford plate. The view itself has little interest; it was taken on a dull day at the end of June, with a Wray's R. R. lens, $f/32$, $\frac{1}{2}$ sec. exposure being given. The print on Ilford printing-out paper is as good as the negative would permit.

TURNER, F. (Morecambe).—"Thornwick Headlands, Flamborough:" we should advise our competitor to send a copy of this photograph to the Geological Survey Committee of the British Association, as it is of considerably more interest as a transcript of the earth's strata than a photograph of coast scenery. A Wray R.R. lens, 11 in focus, $f/32$, was used, 5 sec. exposure being given to an Ilford ordinary at 2.30 p.m. in October.

WESTLAKE, G. H. (Sheffield).—"Fall on the Rivelin:" in this photograph the foreground should have been accentuated; instead of which it is out of focus. The whole picture is flat and lacking in detail. The negative is on an Ilford ordinary plate, exposed for 2 sec. at 9.30 a.m. in May, a Lancaster's Meritotype being used.

BRUNO, MAJOR H. W. B. (Portsmouth).—"Off St. Helena:" we have a splendid effect of light and shade in this photograph, which is on Eastman's bromide paper toned with sulphocyanide of ammonia and gold to obtain the colours of sky and sea. The effect is very interesting as showing the great possibilities of bromide paper. The print is from an Ilford rapid plate, exposed with a right-about-turn shutter on a single lens (Hockin's), of 11 in. focus, working at $f/16$, in May at 5.30 p.m. The photograph was taken in glowing sunset on a windy evening.

BOSTON, JOHN (Macclesfield).—"Aber, N. Wales:" this is a hard black and white print on bromide paper, from an Ilford plate. No point is in focus. The point of view is well chosen. An Optimus R. R. lens, $f/32$, was used, at 2 p.m. in October, 3 sec. exposure being given.

BULL, P. G. (Clifton).—"On the Lyd:" a pretty peep, but the composition not improved by the tree in the centre of the picture, which has fallen from the perpendicular. A Fallowfield's landscape lens was used, $f/11$, and 2 sec. exposure given to an Ilford ordinary at 3.30 p.m. in August.

BALL, F. R. (Clapham).—"On the Glenbeg:" a carefully-chosen quarter-plate view printed in platinotype from a Castle plate that had an exposure of 1 sec. with Lancaster's Instantograph lens, working at $f/20$ in May, at 1 o'clock.

MACADAM, JOHN A. (Assam).—"A Steamer Ghat:" is interesting more as showing the customs of the country than as a specimen of photographic art. The print is over-printed from a rather under-exposed negative. The picture shows us a "ghat" at the mouth of one of the tributaries of the Brahmaputra; in the foreground are river cargo boats, and behind them a floating bungalow for travellers and barge for receiving cargo from steamers. A Wratten's instantaneous plate was used, $\frac{1}{2}$ sec. exposure being given with R. R. lens, $f/16$, at 9 a.m., in October.

DART, W. B. (Torrington).—"Wear Dock:" this is a bright little picture from a half-plate, Marion's, printed in platinotype. Mr. Dart tells us that "Wear Dock had the honour of commencing two or three ships for the Spanish Armada; the ships were finished at Bideford." An Optimus R.R. lens was used, $f/32$, 4 sec. exposure being given, at 4 p.m., in July.

MASON, EDWARD (Askrigg).—"The River Bain:" a charming peep as seen from the bottom of an old garden.

From an Ilford quarter-plate, printed on matt-surface silver. A Lancaster single combination lens was used, $f/22$; 3 sec. exposure, in May, at 4.30 p.m.

COOPER, W., JUN. (Frome).—"Where the River Widens:" a beautiful bit of river scenery with lilies and sedge grass, not, however, improved by the introduction of a figure in a very nineteenth-century tourist suit. The definition of the near foreground is very pleasing to us. A cheap R.R. lens, $f/32$; $2\frac{1}{2}$ sec. exposure given in July, at 10.30 a.m., to a Castle plate.

BRIDGER, HUGH L. (Hampton).—"Abandoned:" in this photograph we have the timbers of an old ship lying high and dry on the sands. It is the only point of interest in the picture, a platinotype print, from a Thomas' rapid plate, taken with a Lawley R.R. lens, $f/22$, $\frac{1}{2}$ sec. exposure, at 10.35 a.m. in September.

GAUNTLETT, EDWIN (Peckham).—"The Dim-seen River:" this photograph is out of focus, and the scene badly put upon the plate, an Ilford ordinary, which was under-exposed, receiving only 4 sec., at 2.45 p.m., in weak sunlight, in the middle of October, with Burr's R.R. lens, working at $f/22$.

FRETWELL, R. T. (Dortmund).—"Trout Stream in the Black Forest:" this photograph gives us a well-lighted bit of woodland scenery, with a small stream making its course through the same. Rather too purple a tone has been secured on Aristotype paper, with the combined fixing and toning bath.

APPLEBY, E. J. (Bath).—"The Old Mill on the Avon:" a charming scene on the Avon. We should have liked the foliage in the foreground and on the weir to have been more defined as it is weak and meaningless. A Lancaster's Instantograph lens was used, $f/22$, and a Barnet plate given an exposure, in August, of $1\frac{1}{2}$ sec., at 5 p.m.

WALLSER, ROBERT T. (Uttoxeter).—"On the Dove:" a well-chosen spot on this lovely river, taken with a Taylor's R.R. lens, $f/22$, upon a Barnet plate, to which 5 sec. exposure was given, at 5 p.m., in September. The print, on Aristotype paper, gives a very bright representation of a September afternoon.

ASH, W. H. (Bath).—"Brixham Trawlers:" this picture is spoilt by the wide stretch of foreground. The sun is full on the lens, and the trawlers, which are waiting for a breeze, are in silhouette. A Lancaster's Rectigraph, $f/10$, was used, an instantaneous exposure being given, in September, at 4.15 p.m., to an Ilford rapid plate.

BOOTH, JAMES A. (Reading).—"Sonning Bridge:" a very carefully-composed picture, with just a little too much river in the foreground, on matt-surface silver paper, toned with uranium nitrate, borax, and gold. The view is very charming, and recalls pleasant memories to a "river man." It was taken with an R.R. lens, $f/32$; $\frac{1}{2}$ sec. exposure, in June, was given, at 3 p.m., to a Thomas' extra rapid plate.

STEPHENS, CHAS. (Reading).—"Lowestoft Harbour:" the view is well chosen, printed on a Carlotype card, vignettied with no very great advantage. The plate, Mawson's, had a very rapid exposure, with a Kershaw's shutter, at the end of October, an Optimus Euryscope lens being used at $f/16$.

BENSON, FREDERICK G. (York).—"By Pleasant Fields and Pastures Fair, the River calmly Flows:" a print on bromide paper, from an Ilford plate, which shows no detail in the shadows. The plate has been under-exposed, 1 sec. only being given, with Optimus R.R. lens, $f/32$, at 5 p.m. in June. The correct exposure would have been nearer 5 or 6 sec.

SMITH, G. (Oxford).—"Ifley Mill:" a very fairly composed picture; toning is a little deep, giving strong contrasts and but little half-tone. A combination lens, working at $f/16$, was used, an Ilford rapid plate receiving an exposure of $\frac{1}{2}$ sec. in August at 3.30 p.m.

CONSTANTINE, GEORGE H. (Manchester).—"Coasters at Lynmouth:" this is a good photograph but wanting in detail in the shadows; the print before us is on Ilford printing-out

paper, from an Ilford ordinary plate, which was given an exposure of $\frac{3}{4}$ sec. with a Darlot's lens, $f/8$, in June at 2 p.m.

CHURCHILL, REGINALD (Barton-on-Trent).—"A Hazy Morning:" this photograph shows us a view at the mouth of the river Neb, Peel; it was taken with a Lancaster's Rectigraph, $f/20$, 1-5th sec. exposure being given to an Edwards' special instantaneous plate, at the end of June, 10 a.m.; the negative is slightly under-exposed. Very good values are given in a platinotype print.

TURNELL, TOM (Stroud).—"Whittlesea Dyke:" this is a bright photograph, the subject fairly placed on the screen; an England's film was used, and an exposure of 1 sec. given with R.R. lens, $f/16$, at 10.20 a.m. in September.

JONES, JAS. G. (Bettws-y-Coed).—"On the Conway:" in this photograph the large unbroken expanse of water in the foreground lacks interest; the best has not been got out of the negative on an Ilford plate, with Obernetter paper.

CLARKE, THOS. (Witley).—"Old Water Mill:" the composition is good, but the subject lacks definition, and the plate, Ilford ordinary, was considerably under-exposed with shutter.

PORTS, MISS ANNIE (Chester).—"A Favourite Spot on the Dee:" makes a pretty picture. The preparation for a picnic and the arrival of two ladies in a boat gives room to conjecture that the operator probably received a reward for her work. A single lens, $f/16$, was used, and $\frac{1}{2}$ sec. exposure given at 5 p.m. in sunlight to a Paget plate. The foreground would have been the better for a little more attention in focussing.

COPEMAN, R. W. (Blandford).—"Pell's Wharf, Beccles:" this photograph, which is reproduced (No. 5), is a river scene of a simple character, and for which Mr. Copeman takes the First Certificate. He used a Beck's R.R. lens, $f/22$, and gave 2 sec. exposure in June, at 4.20 p.m., to an Ilford plate. The print is on Kallitype.

MYERS, MISS M. C. (Newbury).—"On the Kennet:" this is not an interesting view, nor has it any claim to be called a picture. The plate, a Thomas' extra-rapid, was under-exposed with 4 sec. in June at 4 p.m., a Lancaster's single lens working at $f/30$. The shadows are clogged; no point of the photograph is focussed sharply.

PRESTON, GEORGE, L.R.C.P. (Saltash).—"Torpedo Experiment:" this photograph is of more interest as an example of instantaneous photography than as a contribution to a competition of "Seascape and River Scenery" photographs. The picture, which is remarkable for definition, was taken with a Lancaster's Rectigraph lens, full aperture, exposure being given to a Paget xxxxx. plate with Thornton-Pickard's shutter (six turns) in November at 3 p.m.

BROOK, T. MORLEY (Manchester).—"Break of Day:" this competitor has obtained an excellent photograph of his subject. The plate, Edwards' Isochromatic, received an exposure of 1-15th sec. at 5 a.m. in the middle of June, with a Ross R.S. lens working at $f/11$. The morning light is most admirably rendered, and a most effective picture obtained.

POLLOCK, JAS. (Belfast).—"Evening, Larne Harbour:" this photograph is very excellent on gelatino-chloride paper, from an Ilford plate. The clouds, which are printed-in, blend well with the scene. An R.R. lens, $f/11$, was used, and 1-40th sec. exposure given at 5.30 p.m., in the middle of July in weak sunshine.

WINN, ERNEST (Selly Hill).—"Defying Wind and Storm:" in this photograph we have a rock surrounded by the stormy waves: grand in its loneliness. Taken with a Ross R.S., 9 in., $f/8$; 1-20 sec. exposure being given to an Ilford ordinary in July, at 3 p.m.

WATSON, MISS MARGARET (Florence).—"A Quiet Spot, Venice:" this river scene is interesting, and a good bromide print has been produced from an Ilford ordinary plate.

WOODHOUSE, C. H. (Hereford).—"An Autumn Evening:" this photograph is from a much under-exposed negative. Ilford rapid plate, 15 sec. only being given, at 4 p.m., on a dull day at the end of October with Taylor, Taylor, and Hobson's R.R. lens, working at $f/32$. The view is exceedingly uninteresting, and the print on bromide paper is flat and weak.

SHAND, W. R. W. (Chester).—"Penton Bridge:" in this picture a little of the water in the foreground could have been well spared; the bridge would then not have had the stilted appearance. A Taylor, Taylor, and Hobson lens, $f/22$, was used, and an exposure of 4 sec. given in October, at 12.30, to a Castle plate; the print, platinotype, is in good gradation.

HELME, MISS EVELYN (Warminster).—"A River Scene:" from a very weak negative, with no detail in the shadows. The print is on matt-surface silver sensitised paper; toned with borax, acetate of soda, bicarbonate of soda, and gold; the colour is a weak reddish-brown, which lends nothing to the picture. An R.R. lens was used, $f/16$, 3 sec. exposure being given at the end of October, at 11.30 a.m.

DAWES, WILLIAM (Woolwich).—"At Kingston-on-Thames:" this is another very charming river scene, well composed; an Optimus R. R. lens, $f/24$, was used, 1 sec. exposure being given, at 1.30 p.m., in June, to an Ilford ordinary plate.

POLLARD, M. M. (Cheltenham).—"The Old Mill Stream:" had this competitor followed the teaching of Mr. H. P. Robinson, he

would have made much of the foliage, dock leaves, etc., and brought them into prominence by sharp focus; as it is, they are, like too much of the picture, quite out of focus. The lens does not seem to have covered the plate; the lighting is fairly good. The plate, an isochromatic, was slightly under-exposed at 4 sec., with an R.R. lens, $f/22$, at 12 noon, in October. The print is a weak silver one, toned with gold and uranium nitrate.

HARRISON, E. H. (Douglas).—"The Evening Tide:" a fine open view of Peel Castle and the harbour. Unfortunately, the plate, "Castle," was much under-exposed with 1-8th sec.; an Optimus Euryscope lens working at $f/11.3$, in fair sunlight, at 4 p.m.

DILLON, HON. MISS E. (Shipton-under-Wychwood).—"Port of Algiers:" this print is from an under-exposed negative, taken in February, by an instantaneous shot with a Dallmeyer's lens, at 3 p.m. There is practically no detail in this print, which has not been carefully made.

WHITE, G. (Salisbury).—"Petit-Tor:" rocks and headlands make up this photograph. The grandeur of the scene is quite lost, owing to the sea being as calm as a mill-pond; not a breath of wind is stirring, and the mighty giant sleeps. An R.R. lens was used, $f/45$; 12 sec. exposure being given in August, at 4.30 p.m.

SMALLRIDGE, CHAS. (Ivybridge).—"On the Avon:" this is an



No. 5.]

PELL'S WHARF, BECCLES.
(FIRST CERTIFICATE.)

[R. W. Copeman.]

admirable view on the River Avon, well composed, the picture being rendered in careful gradation; with an Optimus R. R., $f/32$, 4 sec. exposure being given to a Barnet plate, in May, at 1.30 p.m. The print is on Fallowfield's Aristotype paper.

SNOWBALL, GEO. L. (Gosforth).—"Early Spring:" this is a well chosen view on the River Eden, with foreground and distance rendered in excellent gradation. An Edwards' landscape plate had an exposure of $\frac{1}{4}$ sec., in June, with a French lens, $f/14$, at 11 a.m.

COSENS, C. H. (Hyde Park).—"Testcombe:" a pretty scene on the River Test, fairly balanced, carefully printed on Ilford gelatino-chloride paper from an Ilford ordinary plate. A Watson's R.R. lens was used, $f/36$, with 10 sec. exposure, at 5.30 p.m., in the middle of August.

MORLAND, J. C. (Belfast).—"View of Black Head:" a pretty bit of Irish coast scenery. Care should have been taken, in placing figures in the foreground, to have had them carefully lighted; as it is, four children are huddled together with their backs to the light, and as a consequence their faces are in deep shadow. An R.R. lens was used, $f/22$, $\frac{3}{4}$ sec. exposure being given in bright sunlight, in July, at 5.30 p.m., to an Ilford special rapid plate.

RUEL, J. F. H. J. (St. John, N.B.).—"Nase's Crossing:" this is a view on the Nerepis river. The lens has not covered the plate, and the photograph, except from a topographical point of view, has nothing to commend it. A Ross U.S. lens, U.S. stop No. 32, was used, 1 sec. exposure being given to a Carbutt's ortho. film, at 10 a.m., in August. The print is on Anthony's platinum printing-out paper.

WESTERN, ALFD. E. (Marlborough).—"The Kennet:" this photograph shows a pretty bit on the River Kennet, in which we should like to have seen the foliage on the river bank rendered with more crispness. A Beck's R.R. lens, $f/11$, was used, and $\frac{1}{2}$ sec. exposure given in July, at 3.30 p.m. to an Edwards' medium Isochromatic plate.

HARRIS, G. E. (London).—"Off Purfleet:" a very excellent view on the Thames, with natural clouds in the negative, a careful print has been secured in platinotype from a Paget's Phoenix plate, which had an instantaneous exposure in June, at 3.30 p.m., with a Watson's R.R. lens working at $f/8$.

MEYNELL, HUGH (Farley).—"On the Wear, Durham:" in this view we have a fine picture of Durham, and the cathedral and the castle standing out in bold outline against the sky. Less foreground and more sky would have improved the picture, which was taken with a W. A. lens, $f/32$, $1\frac{1}{2}$ sec. exposure being given to an Ilford plate, at 5.30 p.m. in July. The weir, which has no water running over it, is not a pretty feature in the subject, and might well have been omitted.

STEELE, LOUIS J. (Holland Park).—"At Low Tide:" a very charming bit of coast scenery rendered particularly effective on matt-surface silver paper, toned with acetate to a warm reddish brown. Clouds and water are very true, the whole picture in soft gradation. An R.R. lens was used, $f/22$, and 2 sec. exposure given on a very clear, bright day at the end of March at 11 a.m., to a Thomas's thickly coated sixty-times plate.

CUNNINGHAM, T. A. (Greenock).—"Creek, near Busreh:" this is a view in Turkish Arabia, and is interesting as showing date trees in the beauty of their foliage. It is to be regretted that there is not more detail in the shadows. The plate, a Thomas slow, received an exposure of 50 sec., on a dull day in May, at 6.30 p.m., with a French lens, working at $f/36$. Printing under tissue paper might give a print with more detail.

GADDUM, MRS. SARAH E. (Altrincham).—"Off Handa Island:" this photograph was taken on the West Coast of Scotland, and gives a fine expanse of rocky foreshore, admirably photographed with a Ross R.S. lens, U. S. stop No. 2, 1 sec. exposure being given, at 2.30 p.m., in August, to an Ilford rapid plate.

EVERSHED, A. R. F. (Braintree).—"Off to Duty:" this photograph is of Lowestoft Harbour, with boats leaving. The composition is all that can be desired. An admirable print has been obtained on the Ilford printing-out paper, from a negative on a Thomas's extra rapid plate, which had an exposure of 1-15th sec., in August, at 10.50 a.m., using an $8\frac{1}{2}$ focus Beck's R. R. lens, working at $f/16$.

BRANTHWAITE, R. W., L.R.C.P. (Rickmansworth).—"Coast near Ventnor:" a well-chosen bit of "rocky shore," lighted carefully, and with life in the restless sea. A Wratten plate was exposed for 2 sec., at 12.30 in April, using a Ross' R. S., $f/32$.

BULBECK, JOHN (Havant).—"The Bend of the River;" this is a view on the Yare, at Norwich, with a very flat, uninteresting foreground. The print is on Celerotype, printed and toned too deeply. A Cadett's Lightning plate was used, $\frac{1}{4}$ sec. exposure given at 12.26 in October, with a Swift's single lens, working at $f/22$.

RAYNER, R. A. (Edinburgh).—"The West Sands, St. Andrews:" there is too great an expanse of view here for the limits of a quarter-plate, Ilford. The print, on matt surface, is carefully printed and mounted. The view was taken with a drop-shutter exposure, with single lens, full aperture.

WELCH, JOHN H. (Liverpool).—"The Ferry, Millor Ground Bay:" a pretty bit of composition; a little more point given to the banks and foliage would have improved the picture. Mr. Welch is a careful worker, and the print, on Ilford printing-out paper, squeegeed on to ground-glass, leaves nothing to be desired. A Wratten-Wainwright plate was exposed for 8 sec., at 6.20 p.m. in May, with a Wray R. R. lens, $f/32$.

RAMSAY, GEO. W. (Richmond).—"A November Afternoon on the Thames:" this proves that Mr. Ramsay is following in the footsteps of Mr. Cembrano, President of the Richmond Photographic Society, but at present he has got little further than imitation, there is not the subtle something in the photograph before us which is to be found in Cembrano's work. An Optimus R. R. lens, $f/11$, was used, 1-12th sec. exposure given at 2 p.m. in the middle of November, to a "Richmond" Ultra rapid plate, with the result that the plate is under-exposed.

GOODWILLIE, H. (Dublin).—"A Relic of the Past:" here we have the old mill and water-wheel by the side of the barn, taken in very strong sunlight and consequently very marked shadows; the high lights are chalky, and the shadows sooty. Lens, a Taylor's R. R., $f/22$, an exposure of 3 sec. being given to an Ilford plate, at 5.30 p.m., at the end of August.

UDALL, F. (Uttoxeter).—"Dove Bridge:" this is a very charming river scene. The shadows are a little deep, but the point of view is chosen with much care. A Suter's R.R. lens, $f/22$, was used, and a Barnet plate received an exposure of 6 sec., at 6 p.m., in September.

WRIGHT, DOUGLAS A. (Torquay).—"On the East Lyn:" here we have one of the many delightful views on the Lyn, a well composed print on Obernetter paper, rather deeply printed from an Ilford ordinary plate; slow printing under tissue paper would improve the picture. A Beck's R.R. lens, $f/22$, was used, 5 sec. exposure being given, at 3.15 p.m., at the end of May.

SHAND, MISS E. M. (Chester).—"The Dee, near Berwyn:" the point of view is well chosen. The stream wants life; the print, platinotype, has good half tones. We hope Miss Shand will enter our next "Ladies' Photographic Competition." With a little more care, we shall expect to see her in the first four. A Taylor, Taylor, and Hobson lens, $f/22$, was used, and $1\frac{1}{2}$ sec. exposure given at 12.30 p.m., in September, to a Castle plate.

COULTHURST, S. L. (Manchester).—"On Conway River:" this is a delightful snap-shot view, well composed, and perfect as a picture, on a Paget xxx plate. Taken at 11.50 a.m., in August, with a Wray's lens, $5\frac{1}{2}$ in. focus. The print is on Obernetter paper.

CRANK, W. T. (Bristol).—"Off Brixham:" a fairly composed picture; an instantaneous exposure being given to a Barnet plate with Euryscope lens working at $f/22$, on a sunny day. No time or date given.

BRADWELL, MISS AGNES T. (Louth).—"Nye Dale, Derbyshire:" this competitor has only been working at photography for a few months, and has made very satisfactory progress. The print, on Kurz's paper, is rather deeply toned, and the shadows clichéd. The work was done on a Castle plate, with an R.R. lens, $f/16$, 2 sec. exposure being given at the end of March, at noon.

STRICKLAND, GERALD (Leamington).—"St. John's, Cambridge:" this is the ever beautiful and popular view of St. John's from the river. It would have been improved had there been a little more river. The boat and canoe are too near. A better print might, we think, be obtained from the negative, Thomas's extra rapid plate. An exposure of 1-20th sec. was given, at 11.30 a.m., in May, with a Ross R.S. lens, working at $f/16$.

WEBLING, A. H. (Brighton).—"In Tow," reproduced (No. 6), was awarded the Second Certificate. The photograph was taken on a cloudy day in May, with a Kershaw shutter; a second plate was exposed for the clouds. A Taylor's R.R. lens, 9 in. focus, $f/16$, was used for a Mawson plate.

ENNIS, P. (Richmond).—"The Thames at Richmond:" this competitor is another of the Cembrano school, and has produced an admirable evening study, taken with the lens (Optimus R.R., $f/16$) pointing to the sinking sun at 7 p.m., in May, cap off and on exposure being given to a Morgan and Kidd's Ultra rapid plate.

RIX, J. J. (Lewisham).—"The Medway at Maidstone:" there are two points in this photograph which call for attention. The first, that no view of nature looks well when printed with rounded corners; second, that the barge on the river is too much end on, and the beam of the vessel is enormous in proportion to the length. The foreground might, with advantage, have been in sharper focus. The technical work is well done, and a very good print obtained, from a negative on Fry's K.S. plate, on Ilford bromide (slow) paper. A Ross R.S., $f/22$, was used, an exposure of $\frac{1}{2}$ sec. being given at noon on a sunny day in June.

WINDELER, W. B. (Long Ditton).—"Frimley:" this is a well selected view on the Basingstoke Canal, but the lighting has not been carefully considered, and heavy shadows on the water spoil the scene and take very much from its beauty. A Swift's rapid Paragon lens was used, $f/32$, 2 sec. exposure being given to an Ilford plate, at 3 p.m., on a bright sunny day in September.

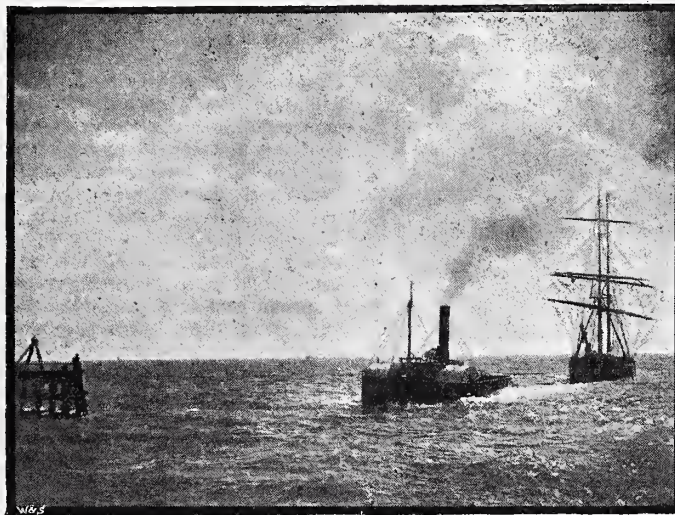
BENYON, MRS. M. (Huntingdon).—"Hoghton Mill:" in this photograph we have too great an expanse of water in the foreground, quite unbroken, and therefore very uninteresting. The mill is a fine old pile, and admirably lighted. It was taken on an Edwards' Isochromatic plate, with a Voigtlander's lens, 2 sec. exposure being given.

SHEARD, PERCY (Batley).—"Stepping Stones:" this is a very fine photograph of a well-selected scene in Yorkshire. More prominence to the foreground would have given depth to the picture. The lighting has been well considered. A Ross R.S., $f/22$, was used, and an exposure of $\frac{1}{2}$ sec. given to an Edwards' plate, at 3 p.m., in April.

BRADBURN, S. JOSEPH (Manchester).—"The River Wye at Monsal Dale:" this is an exceedingly pretty picture. The lighting might have been more carefully considered; the figures on the little jetty would not then have been in such strong shadow. The focussing should have been more general; as it is, the "fixed point" is very apparent. A Dallmeyer R.R. lens, $f/32$, was used in June, and 4 sec. exposure given to an Ilford plate at 4.15 p.m. The printing is well done on gelatino-chloride paper.

SYMONS, G. S. (Plympton).—"On the Tarrant," a stream in Dorsetshire. The cattle are *the feature* in the picture; they compose well, but there is no detail in the shadows. An R.S. lens, $f/32$, was used in February, 1 sec. exposure being given at 10 a.m. to a Wratten's plate.

TAYLOR, A. C. (Peterborough).—"Dartmouth Harbour:" this is a very fine photograph, giving a most comprehensive panoramic view of Dartmouth; taken with an R.R. lens, $f/22$, $\frac{1}{2}$ sec. exposure being given to a Thomas' extra rapid plate.



No. 6.]

IN TOW.
(SECOND CERTIFICATE.)

[A. H. Webling.]

This Monthly Competition, No. 31, is one of the largest yet held by the AMATEUR PHOTOGRAPHER. We are hopeful that the reviewing of the competitors' work in these columns will result in more photographs being received. It would often help the reviewer's task if a few lines of description were sent with the photograph.

All prints for the next Competition,

NO. 32, INLAND SCENERY, WITH OR WITHOUT FIGURE,

must be received on or before the 25th of January. Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, February 12th.)

The University Extension Lecture Society is to give a series of lectures on "The Treasures of the British Museum" at the Town Hall, Westminster, on January 15th and 29th, and February 12th. Application for tickets should be made to the Hon. Sec., J. K. Aston, 3, Dean's Yard, S.W.

Walter Griffiths and Co. have sent us notice that they find their business increasing so much that they have determined to open a central depot at No. 5, Union Pass-age, Birmingham. They intend to allow societies, etc., the use of their show-rooms for meetings, and also the use of a good studio and developing room. Mr. M. O. Suffield is to be the manager, and we note that Messrs. Griffiths mean to extend their business if tact and business push can do it. They also enclose a blank form to be filled up by their clients, which has some very good suggestive points about it.

Exhibitions.

THE WEST LONDON PHOTOGRAPHIC SOCIETY.

THE third exhibition promoted by the above Society was formally opened on Friday, the 8th inst., by the President, Mr. W. Adam Brown, at the Broadway Lecture Hall, Hammersmith, and in his remarks he said that he regretted that the number of pictures was not so large as last year, but what was lost in numbers was more than made up by greater merit, and he was pleased to see also that members as a rule were working larger sizes. The judges, Messrs. H. P. Robinson and Valentine Blanchard, had expressed the opinion that the present exhibition was one of the best seen for a long time, and he was sure the Society would be proud of such a remark. For the second year in succession Mr. Whiting had carried off the President's silver medal, and the fact that two separate sets of judges had picked out the same man for this prize undoubtedly stamped Mr. Whiting as the best worker. Awards were often cavilled at, but now everyone agreed that the medal was well deserved.

Mr. Bilton, in proposing a vote of thanks to the judges, dwelt on the fact that it was an arduous task deciding as to the picture which should receive the medals, on account of so many running each other close in merit, although there was no room to doubt the silver medal had gone to the best picture in the room.

Mr. J. A. Hodges, in seconding the vote of thanks, remarked that although some might think that the judges in wording their report were extravagant, the judges had used more flattering words to the exhibition as a whole. He was sorry to see that one or two who had previously competed had now abstained this year, and he was not certain that the suggestion which had been thrown out to the effect that every member should contribute annually at least one picture was not a very good one.

After cordial votes of thanks to the exhibition and hanging committees, the competition slides were shown on the screen, and Mr. J. A. Hodges took the first bronze medal Mr. W. A. Rogers the second, and Mr. J. E. Kellow the third medal, there being ten competitors who had entered seventy-four slides.

The exhibition is not a large one, but the Society have to be congratulated on showing some very fine work. There are a few bad pictures, and the general standard of work is far above the average of society shows as a rule. The first striking exhibit is that of L. C. Bennett, who shows seven pictures of good quality; and to one of his pictures, "Cutting Weeds," the judges have awarded a medal. We venture to think, however, that "Rubbish Burners" is equally as good and a far more difficult subject, and being printed in a low tone on rough sensitised paper it is very effective; the medalled picture is a bright, cheery print, well treated, and with an effective mist in the background. W. Blizard shows six quarter-plate studies in a rich warm brown tone. Miss A. Brigg, in "A Spring Morning," has just missed the chance of making a very effective picture; had a man and a few sheep or a cow or two been introduced, just to break up the roadway, it would have been more pleasing. Mr. S. T. Chang has been extremely hardly treated by the hanging committee, as two of his portrait studies are hung just above two taken by Mr. Walter L. Colls, of photogravure fame, and the contrast is painful in the extreme. Mr. Colls' studies are "taken without studio," according to the catalogue, but they are of such high class as to have deservedly won a medal from the judges.

Mr. J. A. Hodges, the late secretary of the society and one of its most energetic members, has, we venture to think, the best exhibit on the whole. All the pictures are small but good, and the gem is "Twilight," which is a scene up the river at low water; on the right is a small steam launch lying on the mud, and on the left a bank of heavy dark trees with a brilliant sky light appearing above, and shading off with well-composed clouds into the body of the picture, the whole forming a fine study in the massing of light and shade, which won a medal, as was expected by all who saw it. G. Lamley has one or two good wave studies, and the expression on the boy's face in E. S. Miller's "I can smoke, I can," is good, the picture representing an urchin seated astride an upturned boat and enviously watched by two other small boys. Mr. W. S. Rogers, in "A Dredger, Kew," which takes a medal, has a picture from which many other members of the society may learn a lesson, and that is, what may be done by the judicious use of the scissors, as the print only measures about $2\frac{1}{2}$ to 3 inches, by $6\frac{1}{2}$ inches, and is, we should think, cut down from a half-plate. There are many

other pictures shown which could be much improved by judicious pruning; even Mr. L. Selby, in "Far from the City's Strife," which has taken a medal, would have considerably improved it by cutting at least an inch off the left side of the picture, where a fault is seen. Mr. H. Selby shows good work too, and Mr. A. W. Scanlan has spoilt good work by over-printing. G. E. Varden takes a medal for a good winter study.

Mr. Whiting's picture, which takes the President's silver medal, is an enlargement from a half-plate, and shows us an "Early Morning" at Hastings; and half the beauty of the picture is in the clouds, which, we understand, were not printed in but were on the original negative. Mr. C. Winter has a picture which is one of the best examples we have yet seen of the "First Touch of Winter," showing so clearly the lighting up of a dark post by reflected snowlight; but the picture is spoilt by a slight fault in one corner of the sky.

There is a small exhibit of apparatus. Messrs. Mawson and Swan show Loman's reflex hand-camera, which allows one to see the image on a full-sized focussing screen up to the moment of exposure, and possesses a blind shutter working in front of the sensitive plate; they are also showing a focal plane shutter adaptable to any camera, Hume's well-known Cantilever enlarging apparatus, and a new stand, the "Varden," invented by one of the members of the society, and which is exceptionally light, rigid, and cheap, and possesses no loose parts; the same firm are also showing a new cheap single slide for cut films, made of Willesden paper, twelve of which only take up the space of three inches. Mr. T. D. England shows flash lamps and some lantern slides on his well-known lantern plates. Mr. G. E. Varden also exhibited his own hand-camera, the special features of which are that the plates are carried in Lancaster's metal carriers in bags, which fit over a slot, through which the plates drop into the camera, and as soon as one is exposed a circular plate is revolved, bringing another plate into position; the camera has also a swing-back, and eight bags can be carried inside the camera. Mr. W. S. Rogers, another member, showed his invention, the "Graphic" hand-camera, which is placed upon the market by the London Stereoscopic Company, of Regent Street, and whilst it is a magazine camera, it is of exceptionally small bulk; the twelve plates are stored in grooves at the back of the camera, and a special carrier slides along the top till over a groove, and on turning up the camera the plate falls into the carrier, and is then pushed towards the front and dropped into the exposing groove, and returned in the same way; the shutter is on the blind principle, working at the back of the lens; the camera is very light, and we shall probably soon have more to say of it.

The Exhibition Committee have provided a very good entertainment for the photographic mind, and Mrs. Hodges, Whittier, Rogers, and Bennett have also to be congratulated on the success of their department of coffee, cakes, and conversation.

Leeds Photographic Exhibition.—The Leeds International Photographic Exhibition, held in the Municipal Art Gallery during the past five weeks, was brought to a successful conclusion on Saturday. In the afternoon Mr. H. R. Horn's orchestral band rendered a selection of music, following which there was a special exhibition of the prize lantern-slides. In the evening Mr. T. W. Thornton, Vice-President of the Leeds Photographic Society, delivered the last of the series of lantern lectures to a numerous audience, Mr. Godfrey Bingley occupying the chair. Mr. Thornton, whose subject was "Rambles with a Camera in Yorkshire and District," started from Leeds, showing a number of slides of Kirkstall Abbey before its alteration. Thence, in a succession of views, he led his audience up the Wharfe Valley to Ilkley, Bolton, Barden, and Kilnsey, after which a number of slides of the Ribbles were shown on the screen. The Nidd Valley was next visited, Knaresborough, Ripon, Fountains Abbey, and Fountains Hall being pictured and described. Then followed a number of scenes on the Ure, including Redmire, Aysgarth, Askrigg, and Hawes, after which the Swale Valley was dealt with, and pictures shown of Richmond, Kasby, and Muker. The Tees was next reached, with views of High Force and Barnard Castle. Scenes on the Yorkshire coast completed a most interesting collection. On the motion of Mr. Branson, a hearty vote of thanks was accorded to the lecturer. Over nine thousand people have visited the exhibition, and of these 7,463 have paid for admission, 1,565 have been season-ticket-holders, and 200 have entered with children's tickets. About four hundred people were present on Saturday night. The wet and foggy weather prior and up to Christmas confined the attendance during the earlier portion of the season to very meagre limits, but since the finer weather set in the exhibition has been a marked success in every way.

Societies' Meetings.

Brixton and Clapham.—An ordinary meeting was held on the 7th inst. at the new rooms, 376, Cold Harbour Lane, the President, Mr. A. R. Dresser, in the chair, who briefly introduced Mr. H. M. Smith, of the Eastman Company, who had consented to give a demonstration upon the "Kodak." Mr. Smith explained shortly the various sizes and shapes of cameras made by the company, including also the new No. 5 folding Kodak. This camera as now constructed admits of the use of plates as well as films, the back of the case opening to allow the picture to be focussed on ground glass, which in turn is replaced by an ordinary double dark slide. The camera can be placed upon a stand, and is at once an ordinary camera and a hand-camera in one. The splendid finish and general appearance of all the articles turned out by the company attracted general admiration. The lecturer then proceeded to show by means of the lantern some slides made from Kodak negatives, which, considering the difficulties under which many of them had been taken, testified to the efficiency of the cameras. Mr. Dresser, in proposing a vote of thanks to Mr. Smith, alluded to the fact that he had from the very first advocated the use of films. Mr. Smith, in replying, thanked the members for the kind way they had passed this resolution, and expressed a hope that this might not be the last opportunity he should have of addressing them. The next item on the programme was a demonstration by the Incandescent Gas Light Company of their system of lantern illumination. This appeared rather at a disadvantage, after the club's limelight apparatus, which had been used during the earlier part of the evening. The general opinion, however, was, though not so powerful as limelight, still it possessed many advantages over oil, and with some slight improvements, would be of good service where it was impossible to obtain the former. Dr. Reynolds, in proposing a vote of thanks to the company, said that he had tried this system some twenty years ago, but had been unable to hold together the substance producing the incandescence, and believed that this company were the first to succeed in this respect. Owing to the late hour, several matters of importance were postponed.

Darlington.—The usual monthly meeting was held in the Assembly Room at the Imperial Hotel. Mr. Howlett presided, and there was a good attendance of members and friends. A splendid collection of 160 prize slides, sent by the Editor of the AMATEUR PHOTOGRAPHER, was exhibited and greatly admired.

Devonport.—On the 4th inst., Mr. Charles J. Harris presiding, there was a full attendance of members and visitors. Mr. H. Tonkin, of Penzance, read a paper on "Enlargement," and gave illustrations by means of an optical lantern. The process was watched with interest. The result was excellent, considering that the arrangements were improvised. Mr. Tonkin afterwards showed nearly forty magnificent enlargements of life and scenery in the Mount's Bay district. Frequent and deserved applause was evoked both by the charming character of the subjects, and the skill and ability exhibited in the work. The pictures were the finest ever seen in the neighbourhood.

Douglas Lantern Society.—The first meeting of the above society was held on Friday, January 8th, when about 180 slides were shown by means of the limelight. The following members brought slides: Messrs. Thomson, Harrison, Craine, and the Secretary. The lantern, which is a new one, was supplied by Messrs. Archer, of Liverpool, and gave every satisfaction. Mr. Thomson and the Secretary attended to the lantern, and had no difficulty in securing a perfectly-lighted disc of 12 feet. The slides being local subjects frequently elicited warm applause.

Faversham.—The members assembled on the 5th inst. last, to witness a lantern exhibition of slides printed from negatives taken with the "Kodak" hand-camera. The exhibition was by the Eastman Photographic Company. Mr. C. Cremer kindly undertook to exhibit the slides, and, by means of his excellent limelight lanterns, he certainly displayed the series of photographic views on the screen very successfully. They comprised a great variety of subjects, all taken with Kodak hand-cameras, in all parts of the world, and furnished such an interesting and entertaining exhibition as deserved a much larger audience. Dr. Evers was chairman, and, in appropriate terms, introduced Mr. H. M. Smith (the Eastman Company's representative), who first explained very lucidly and practically the construction and working of the various forms of Kodak cameras, and then briefly described the various slides as Mr. Cremer exhibited them on the screen, and undoubtedly produced a very favourable impression on his audience as to the usefulness, handiness, compactness, and general excellence of this form of camera.

Glossop Dale.—At a general meeting called for January 4th, for electing officials for the ensuing year, there was a good muster of members and associates. Owing to the unavoidable absence of the President (Captain Partington), Mr. Merry was voted to the chair. President, Captain Partington, J.P., C.C.; Vice-Presidents, Colonel Sidebottom, M.P., Messrs. J. Sidebottom, J.P., C.C., S. H. Wood, Rev. C. B. Ward, M.A., R.D.; Council, Messrs. S. Bamforth, J. Merry,

H. Broadhurst, J. Walkden, T. W. Sharp, Rev. J. Lambley, M.A., Mr. G. Hadfield; Secretary, Mr. J. Walton; Treasurer, Mr. J. Hardman; Librarian, Mr. H. Broadhurst; Auditors, Messrs. G. Lake, F.S.C.I., and A. P. Golden; Chairman, Mr. S. Bamforth; Vice-Chairman, Mr. Jas. Merry. Meeting nights: business, Tuesday; social, Thursday and Saturday. The following was proposed and unanimously adopted:—"That each working member of the Society shall, during the coming photographic season, prepare twelve pictures, either lantern-slides, enlargements, opals, or whatever they think proper; the same to be delivered at the Society's rooms by the 1st of October, with a full account of the make of plates used, time exposed, time of day, how developed, etc., the pictures to become the property of the Society for exhibition purposes." By these means the Society hope to promote friendly competition amongst the members (especially young members, many of which have joined recently) and thereby increase their knowledge of the photographic art.

Hereford.—A lantern evening was held on January 5th at the Working Boys' Home Schoolroom (kindly lent by the Managers of that institution). The series were a set of competition slides lent by the Editor of the AMATEUR PHOTOGRAPHER for the occasion. Mr. E. Horth manipulated the lantern, Mr. W. E. Haines reading the description of each slide as thrown upon the screen. The series, comprising architectural, landscape, landscape with figure, seascape and shipping, figure studies, were a very good set, some of the architectural subjects being very fine. The last competition slides taken by members of this Society were then put on the screen in their order of merit, and were received with applause. Another set of prize slides were then shown and examined, and Mr. E. G. Davies, Assistant Hon. Sec., was awarded the first prize for the best set of three slides, which comprised two views of Pembroke and one of the Abbey Archway, Malvern. Altogether there were seven competitors. Mr. Alfred Watkins and Mr. W. E. Haines acted as judges. The next lantern evening will be held on February 2nd.

Holborn.—The first meeting of the new year was held on the 8th inst., Mr. D. R. Lowe (Vice-President) in the chair. Mr. Herbert Thompson gave an interesting lecture on "Kallitype—No. 2." After giving a short history of the process, he spoke of the exposure of the paper. The paper strongly resembled platinotype, and the exposure was judged in the same manner, the printing being continued until the detail in the highest lights showed faintly. The sensitiveness of kallitype paper was considerably greater than silver, and the paper must be examined in a very weak light. Clouds could be printed in by double printing, in the same manner as printing on silver paper. The paper was developed in the following bath (for black tones):—Rochelle salt, 1 oz.; borax, $\frac{3}{4}$ oz.; water, 10 oz. Mix cold and use cold. Any undissolved salts after shaking might be left in the bottom of the bottle. To the above solution 12 to 15 drops of a 20-grain solution of bichromate of potash were added. Prints developed in rochelle salt alone were not of a pleasing tone. The addition of borax gave greater transparency to the shadows and produced a black tone. A smaller quantity of borax produced prints of a purple tint. The bichromate of potash was an oxidiser, and its effect was to give contrast. A great amount of control was given by this substance. By using less than the normal quantity, soft prints might be obtained from hard negatives; and by increasing the quantity, thin or flat negatives might be made to yield brilliant prints. A very small quantity makes a considerable difference, and great care must be exercised in using it, or too much would be added, and the effect would be a muddy and thoroughly disreputable print. The print should be left in the developer for about twenty or thirty minutes, so that the conversion of the iron salts into a soluble form might be complete. The prints would appear to be developed in a much shorter time, but if removed too soon the iron would not be removed in the fixing bath, with the result that the prints would be liable to fade, and probably stains would appear to some after-stage of the process. After development place the prints directly in the fixing bath (4 drms of ammonia '880 deg. to one quart of water). The prints should be freely moved in the fixing bath for about ten minutes, and then passed through a second bath of the same strength to ensure perfect fixation. After fixing, the prints were washed for about ten minutes in several changes of water, then placed on a sheet of glass to drain, blotted off between clean blotters or cloths kept specially for the purpose—free from acid or hypo—and spread about to dry in the air. If left in a wet condition between the cloths, stains are liable to appear. Some excellent prints, kindly lent by the Birmingham Photographic Company were passed round, and an interesting discussion followed.

Leigh.—A number of gentlemen met at the Literary Society's Rooms, Leigh, to consider the formation of a society for Leigh and district. Mr. J. H. Stephen was elected President, Mr. James Ward Vice-President, Mr. W. R. Moore Secretary, Mr. E. A. Williams Treasurer. The opening meeting will be held in the Old Grammar School, on the 21st inst., when Mr. Crouchley will give a demonstration on "Developing Transparencies," and the President will show some lantern slides.

Lewes.—A meeting was held on the 7th of January at the Co-operative Hall, when the *Photography Prize Slides* were shown. Several of the slides were of exceptional merit, and were much admired by those present. Mr. Percy Morris, School Hill, Lewes, having consented to act as joint Hon. Secretary, communications should be addressed to him until further notice.

Phot. Soc. of Ireland.—A special general meeting of this society was held at the rooms, 15, Dawson Street, Dublin, on the 8th inst., Mr. J. H. Woodworth in the chair. After the business for which the meeting had been called had been disposed of, the ordinary monthly meeting was held, and Mr. J. H. Hargrave, Hon. Secretary, gave a very interesting demonstration of "Lantern-slide Making." He traced the process of slide manufacture from the old highly-coloured representation of impossible men and animals to the high degree of perfection at which they have arrived to-day by means of photography. Mr. Hargrave showed some excellent methods of making diagrammatic slides by covering glasses with different kinds of varnish, and drawing upon them with ink or colour. He also exhibited some very fine specimens of intensified slides. At the close of the demonstration Mr. H. C. Draper showed some metal binders, and home-made lantern-slide cameras were exhibited by Messrs. Ruthven and Inglis.

Preston.—An exhibition of slides was held on the 7th inst., in the room of the association, when there was a large attendance. The evening was devoted to the exhibition of slides from the Boston Camera Club, U.S.A. The first views were those of the White Mountains of New Hampshire. Mr. Jackson manipulated the slides, and the views were thrown on the screen with a fineness of outline which brought to those present a very vivid realisation of the picturesque beauties and grandeur of the great amphitheatre of hills. The second series of views dealt with scenes in and about Columbus, and were very effective. The descriptive sketches were perhaps a little lengthy, but in the hands of Mr. Harold Jackson, of Oakenclough, they added to the realism of the scenes depicted. The meeting was enlivened by musical selections, Mr. G. Gifford rendering the humorous portion of the entertainment, and duets being given by Messrs. Greenwood and Wilding. The next exhibition will consist of scenes illustrative of Boston, U.S.A.

Richmond Camera Club.—On the 8th inst., M. Cembrano in the chair, Mr. Ennis read a paper on the recent exhibition of the P.S.G.B. After commenting on the return to warm tones and other general features of the exhibition, Mr. Ennis called attention to the pictures of most of the leading exhibitors and others worthy of notice, his remarks showing that considerable artistic knowledge had been brought to his study of the exhibits. He also remarked upon the carelessness and lack of taste shown in too many instances in the mounting and framing of the pictures, many of which were spoilt by the obtrusive ugliness of their accessories. The discussion was continued by Messrs. Cembrano, Davis, Ardaseer, Whipple, and others.

Sheffield.—Mr. Paul Lange (President of the Liverpool Amateur Photographic Association) gave his lecture on "Norway, the Land of the Midnight Sun," illustrated by limelight, under the auspices of the Sheffield Photographic Society, at the Music Hall, Surrey Street, on January 5th. In the absence, through sickness, of the President, Mr. Ernest Beck took the chair. The views were charming, but the lecturer's concise and genial comments on the scenery and customs of the people greatly increased the pleasure of the audience; and so unostentatiously is the story told that the listener finds himself wholly absorbed in the scene and the surroundings and becomes one of the party. The views were taken by Mr. Lange himself on a three or four weeks' tour in that country. The cloud effects are some of the finest ever seen.

South London.—The evening of the 4th inst. was devoted to the instruction of beginners by Mr. F. W. Webb. The lecturer, after explaining the various movements of the camera and their uses, dealt with exposure and the methods of developing negatives, exhibiting a considerable number of the latter to illustrate the pitfalls of the beginner, at the same time giving valuable advice as to how these were to be avoided. Mr. Webb produced a spectrum screen which he had made with photographs in the camera on Ilford ordinary and isochromatic plates, which led to a long discussion as to the uses of colour-correct plates, and prints from Edwards' isochromatic plates and Gotz's Obernetter Perutz films, together with the negatives, being referred to in the course of remarks by the older members. By the courtesy of Messrs. Greff and Co. samples of the Rodinal developer, and of Paramidophenol by Messrs. Hinton and Co., were distributed among the members, the results to be produced on another evening. A 12 by 10 Popular camera by Crouch was on view, and much admired by the members present.

Stockton.—The members met for the first time this year on Tuesday, the 7th inst., when the AMATEUR PHOTOGRAPHER Prize Slides were exhibited by Dr. Stainthorpe, and they gave entire satisfaction to the audience.

Tunbridge Wells.—The sixty-seventh ordinary meeting was held at the Mechanics' Institute on the 8th inst., Mr. George Lewis in the

chair. It was expected there would be a large attendance to hear Mr. H. M. Smith, the representative of the Eastman Company, deliver his lecture on the "Kodak" Camera, and to see the slides which were to illustrate what work these celebrated hand-cameras could produce, but the prevailing epidemic prevented a great many from attending. The first part consisted of a description of the different sizes (several of which were on view) and explanation of the lens, shutter, and manner of working the roll holder. The pattern that attracted most attention was the new folding Kodak, which can be used either with the roll holder or double backs. Mr. Ashton brought one of the first made Kodaks, which he had successfully used in Spain and elsewhere, and which also attracted a good deal of attention. The slides were interesting, as showing the power of the lens in depicting close and distant objects in focus, and showing how useful these cameras were for collecting views of places visited for making lantern-slides from the films exposed for exhibition purposes and lectures. Mr. Smith showed how failures might occur, and the best remedy for them, and kindly answered a great many questions put to him on the subject. The Hon. Secretary showed one of Mr. J. Dore's lantern-slide printing frames, for contact printing only. It was considered the best that had been seen, being adjustable, and fully bore out all the advantages that were claimed for it.

West Surrey.—The first of the annual lantern evenings took place at St. Mark's Schools, Battersea Rise, on the 7th inst. The meeting was opened by a short speech from Mr. Seward, in the course of which he said the attendance at similar evenings last year, when they had become thoroughly known, was such that the Committee believed, in repeating the evenings this winter, they were only doing what was expected of them by the general public of the district, and that their efforts to afford amusement and raise the opinion of that public, of the work possible to photography, would be appreciated by photographers and public alike. The slides which were shown on the screen by oxy-hydrogen light were an exceptionally fine set, the only fault—if it can be called one—being that they were rather too numerous. Between three and four hundred slides in the evening necessitated their being passed through rather quickly, and much of the beauty of many of them was thus lost. A collection from the Camera Club, which included many of Major Nott's and Gambier Bolton's animal studies, slides from the collection of G. Davison (one of the Vice-Presidents of the society), country studies by F. Howard, and many others, were much appreciated, applause breaking out again and again as the slides followed in quick succession. Slides from the collection of Mr. Graham, a member, followed, most of these being hand-camera work. As scenes from the ridiculous—or humorous—side of life, these are perhaps a collection which it would be hard to equal, and the laughter was kept up without break for some time. The Arctic Series and Rejlander slides, kindly lent by the Fry Manufacturing Company followed, both sets well known to photographers. Slides by Messrs. Seward, Smith, Swingle, and Wilshire, all of which were local views, and at which, as each place was recognised, the younger part of the audience gave vent to their feelings for their own particular locality or favourite haunt by sundry shouts, were followed by half a dozen new slides by Mr. Graham. The audience dispersed with the laughter still ringing in their ears. So much so, in fact, that the chairman fears his last words were not heard, and he begs therefore to repeat that the next meeting will be held on January 20th, at 8 o'clock, when Mr. Clarke will demonstrate the working, etc., of the New Incandescent Gaslight for use with the optical lantern.

SOCIETIES' FIXTURES.

Jan. 15.—**RICHMOND.**—Conversazione and Lantern Exhibition.

" 15.—**LOUTH AND DISTRICT.**—Annual Exhibition.

" 19.—**NEWCASTLE AND NORTHERN COUNTIES.**—Annual Meeting; "Platinum Toning," J. Brown.

" 19.—**P.S.G.B.**—"Distortion of Outline," by Chapman Jones.

" 19.—**NORTH LONDON PHOTOGRAPHIC SOCIETY.**—"The Dark Room," by E. Clifton. Commence at 8.15. Visitors are invited.

" 21.—**LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.**—Monthly lantern night.

" 21.—**CAMERA CLUB.**—"The Rendering of Quick Movement by Photography," by A. Maskell.

" 21.—**BRIXTON AND CLAPHAM.**—"Printing Processes," by the Secretary.

" 22.—**PUTNEY.**—"Home-Sensitised Paper," by Mr. Ardaseer.

" 25.—**CAMERA CLUB.**—Elementary Lecture, by V. A. Corbould.

" 26.—**P.S.G.B.**—Lantern Slide Making, discussion on.

" 28.—**CAMERA CLUB.**—"Lantern Evening," slides by Lt.-Col. Gale.

" 29.—**PUTNEY.**—"Manipulation of the Optical Lantern," by the President.

" 30.—**PUTNEY.**—"Hand Cameras," by A. R. Dresser.

Apparatus.

THE "PROFESSIONAL" PRINT DRYING PAD.

Messrs. Percy Lund and Co., of Bradford and London, have sent us a sample of their latest novelty, which ought to find strong support from amateur as well as professional printers. By means of it any ordinary printing frame may be utilised as a press for drying and flattening prints between blotting-paper. The pad consists of forty sheets of strong non-fluffy Robosal blotting-paper. The prints are interleaved with blotting-paper, a sheet of stout metal placed top and bottom, and the packet placed in the printing frame, and the springs clamped down. The prints may either be left in this position till wanted, or immediately removed, when they will be found nearly dry and perfectly flat. This novelty will be of great convenience.

TYLAR'S NEW SINGLE DARK-SLIDE AND TAP FILTER.

Mr. Wm. Tylar, of 57, High Street, Aston, Birmingham, forwards two useful novelties, which are likely to find considerable



favour with practical workers. The one is a new form of single dark - slide, which has some features which will recommend it to every hand-camera worker. The shutter draws right out, and the space which a dozen of these slides occupy is considerably less than that taken up by three ordinary dark-

slides. The plates are inserted by raising a narrow strip of metal at one side of the slide, slipping the plate under the other three sides, and then clipping it into its place. These slides will undoubtedly be found by every hand-camera worker to be the easiest and most convenient slides for that particular work, and their cheapness will recommend them to all.

Mr. Tylar also sends one of his new tap filters, which we at once

welcome as a useful and cheap method of obtaining pure water for photographic purposes. Of the importance of this it is hardly necessary for us to speak; possibly, if all our readers used pure water, we should have fewer questions about stains and markings. The new tap filter is very easily affixed (fig. 1) by merely pressing it on to the tap nozzle, as shown in fig. 1, and

at once a quick and good stream of pure water is obtained, quite fit for all photographic purposes. The tap filter is cleaned very readily by merely unscrewing and reversing on the tap connection, as shown in fig. 2. It is like most of Mr. Tylar's goods—at once practical, useful, and cheap—and is handsome-looking and well made of stout brass, and does not seem likely to easily get out of order or be damaged.

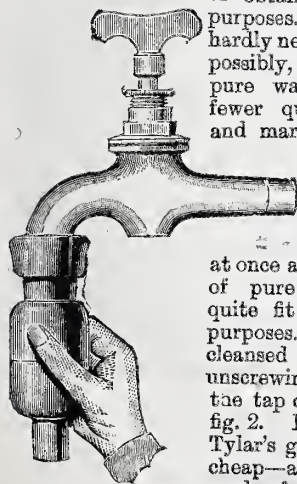


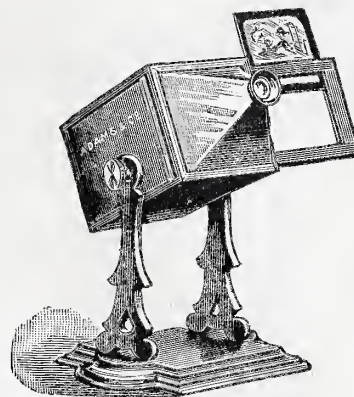
FIG. 1.



FIG. 2.

ADAMS AND CO.'S PANTOSCOPE.

Messrs. Adams and Co., of Aldersgate Street and Charing Cross Road, have sent for our inspection their new form of lantern-



scape, which is handsomely put together in mahogany and nickel. It has a short focus lens at the eyepiece, which is adjustable to different sights, and is very effective in giving a pseudoscopic relief to the lantern-slides so much so that to the uninitiated or popular world it might replace the stereoscope. It has also a new form of sliding carrier on the principle of the optical lantern carrier which enables one slide to be placed ready for examination, and it can then be pushed through and the

other removed in the same fashion. The new Pantoscope is decidedly an improvement on the old form, and it will, doubtless find many friends.

WHEELER'S NEW PHOTOGRAPHIC HELPS.

Geo. Wheeler and Co., of 46, King Street, Manchester, are always introducing new little helps for amateurs and professionals. The latest are the ready-marked lantern-slide masks, which obviate the trouble of affixing the little white spots to the mask; and the other novelty is a special thin damp-resisting backing paper for gelatino-chloride prints which we have been wishing for for some time; it is very thin, yet effective, and does not interfere with mounting at all. Wheeler's helps are pretty well known and appreciated, and we think that these two new-comers will find equal favour and support.

PERCY LUND'S SNAP-SHOT ALBUM.

Messrs. Percy Lund and Co. have sent us a sample of their new detective or snap-shot album, which is a neat and well-made book, and has the special feature of being English, made of specially-selected pure boards, so that there is no danger of any highly-prized print being lost when once mounted. Each leaf is very strongly attached to the book by means of stout linen, and there seems no likelihood of their parting company. We are also glad to see the absence of Dutch metal or the so-called gold leaf, which is always a probable source of trouble and unsightliness.

Quarterly Examinations in Photography.

QUESTIONS.

- 4.—What is the action of the swing-back on the picture?
- 5.—Explain your own method of developing.
- 6.—What are the characteristics of an under-exposed and an over-exposed negative?

Latest Day for Answers, January 25th.

RULES.

1. Answers must be received on the date stated each week in the AMATEUR PHOTOGRAPHER.
2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.
3. A *nom de plume* may be used, and must follow every answer, and be affixed to every specimen of practical work.
4. Answers are not limited in length, but preference will be given to concise answers without unnecessary amplification.
5. Those desirous of competing must apply to have their names entered. As these examinations are intended to encourage the study of the theory and practice of photography, authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.
6. Past successful candidates will not be allowed to compete.

NOTE.—No information of any kind will be given to competitors, and nothing but the answers must be included for the examiners. All other communications must be addressed to the Editor.

Marks will be given for all answers, and, when possible, the best three answers will be published. The answer will not be published till the week following receipt of the same, and the examiners criticise each answer sent in, and when no satisfactory answer is received, will supply one. Three prizes will be awarded at the end of each quarter. (Full syllabus on application.)

All communications to be addressed to:—"EXAMINATION DEPARTMENT," AMATEUR PHOTOGRAPHER, 1, CREED LANE, LONDON, E.C.

Holidays with the Camera.

LIST OF COMPETITORS.

<i>Name of Competitor.</i>	<i>Title of Photograph.</i>	
Bulbeck, J. (Havant) ...	Some First Attempts in Norfolk	
Lysaght, Major J. D. (Cork) ...	An Autumn Trip to Switzerland	
Third, W. C. (Elgin) ...	On the Lössie	
Gear, J. H. (London) ...	In the Isle of Wight	
Morgan, J. W. (Tunbridge Wells) ...	A Week in the Isle of Wight	
Young, Arthur (Hyde Park) ...	A Holiday in Italy	
Calvert, G. A. (Clapham) ...	Holiday in the Fatherland	
Longmire (Sydenham) ...	Three Weeks in Scotland	
Howie, W. Lamond (Eccles) ...	By Lake and Mountain	
Moore, A. E. (Guildford) ...	Fortnight in North Wales	
Cobb, Cyril S. (Surrey) ...	Circular Tour in Mediterranean Waters	
Kenworthy, J. (Ashton-under-Lyne) ...	Holiday in Norway	
Atkins, Dr. Ringrose (Waterford) ...	Theatres and Temples of Ancient Greece	
Simkins, Jas. (Birmingham) ...	A Peep at North Devon	
Cole, C. Court (Oxford) ...	Holidays Spent in Oxford	
Shaw, Jas. (Manchester) ...	The Valley of the Wye	
Collier, Miss Rose (Liverpool) ...	In a Chalet 7,000 feet above the Sea	
Clarke, S. Francis (Louth) ...	A Few Days in Savoy	
Ballantyne, Thos. (Glasgow) ...	By Mount and Stream and Sea	
Stow, Rev. F. W. (Bedale) ...	Trip to Canada	
Wain, E. B. (Norton-in-the-Moors) ...	Quiet Corner in North Wales	
Groundsell, W. D. (Shanklin) ...	Devonshire and the Isle of Wight	
Bennett, R. A. R. (Oxford) ...	Visit to Cambridge and South Devon	
Welch, J. H. (Liverpool) ...	Widmermere	
Dart, W. B. (Torrington) ...	With a Hand camera	
Firth, G. F. (Wakefield) ...	Four Days at Ripon	
Douglas, S. E. (Perth) ...	A Shadow Catcher in the Highlands	
Roberts, R. L. (Cleveland) ...	Three Weeks in Norway	
Gladstone, W. (Bo'ness) ...	From Glasgow to Oban	
Newland, Surg. A. J. E. (Burma) ...	The Chin Hills	
Ferguson, W. R. (Newcastle-on-Tyne) ...	Holiday in Teesdale	
Paterson, A. G. (Barnsley) ...	Holiday in the South-West	
Heriot, T. H. P. (Finchley) ...	Fortnight in the Channel Islands	
Powell, Francis (Dunoon) ...	Holidays with the Camera	
Meynell, Hugo (Cheadle) ...	Durham City	
Kelsall, J. R. (Dublin) ...	Five Weeks in Norway	
Goodwillie, H. (Dublin) ...	Lough Derg and the Shannon	
Stieglitz, Alfd. (New York) ...	Cortina and Sterzing	
Stone, Miss E. G. (Willesden) ...	A Fortnight in Scotland	
Dresser, A. R. (Bexley) ...	Trip to Hastings	
Davies, E. W. (Manchester) ...	Ten Days in and about Keswick	
Legge, Chas. A. (Birkenhead) ...	Holiday in Shropshire, North Wales, and Yorkshire	
Gill, Richard (Chorley) ...	Taking a House in the Country	
Ruel, J. H. T. (St. John's, N.B.) ...	Three Weeks on the St. John River	
Harris, H. (Hayward's Heath) ...	Twelve Views in the Ardennes	
Horvex, F. H. (Richmond) ...	My 1891 Holiday	
Ellis, J. E. (London) ...	Our Trip to the Isle of Wight	
Glazebrook, Thomas (Ashton-under-Lyne) ...	Tour Up the Wye Valley	
Bury, J. Oswell (Wrexham) ...	The Wild Welsh Coast	
Sheard, Percy (Birstall) ...	Lions and Lambs	
Perkins, Rev. T. (Shaftesbury) ...	Six Weeks in the South and South-West of England	
Bassano, C. W. (Old Hill) ...	A Month in Switzerland	
Taylor, J. Kidson (Buxton) ...	In the Western Highlands and a Week in the Midlands	
Cowan, W. Errington (Newcastle-on-Tyne) ...	Holidays	
Livingston, Clermont (London) ...	My Holiday at Croyde	
Gottlieb, A. W. (Shrewsbury) ...	Holidays in Yorkshire and Shropshire	
Holt, Harry (Liverpool) ...	The Lakes and North Wales	
Mamsey, Mrs. (Carlisle) ...	Holidays with a Camera	
Clarke, Walter J. E. (Sidcup) ...	A Photographic Holiday	
Emanuel, C. (Hyde Park) ...	The Haven under the Hill	
James, Thos. (Worcester) ...	My First Holiday in the North	

Camera Club.—On Thursday, January 7th, a lecture illustrated by lantern slides was delivered by the Rev. A. B. W. Wharton, M.A., upon the subject of "The Artistic Aspect of the Ober-Ammergau Passion Play." Mr. W. Clarke occupied the chair. The striking characteristics of the villagers and the play at Ober-Ammergau were well brought out by the lecturer in an able address, as well as by the pictures which were shown. Some discussion followed the lecture, in which Messrs. J. S. Wharton, J. Pennell, and the Chairman took part.

Rotherham.—The usual monthly meeting was held on the 5th inst., when there was a good attendance to hear a paper by the President (Dr. F. B. J. Baldwin) on "Focussing." In a very comprehensive way the subject was dealt with, special negatives having been prepared for illustration. Pinhole work and the uses of lenses were also referred to. The general business of the meeting included the granting of a guinea to the Maddox Testimonial Fund and the passing of a vote of condolence with the family of Mr. Luke Berry, a member of the council, and whose death had occurred since the previous meeting. Mr. T. W. Mosby was elected to the vacancy. Two new members were ballotted for.

To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

QUERIES.

5367. **Microscopy.**—Can any reader inform me how to produce minute photographs suitable for placing and exhibiting under the microscope? Details would oblige, along with apparatus necessary.—R. L. H.

5368. **Backing for Plates.**—In Mr. E. J. Wall's "Dictionary of Photography," page 17, the author states that his favourite backing is "bronzed purple," stuck on to the back of the plate with a little glycerine. As the glycerine dries, is the paper likely to peel off? and if so, in how short a time from attaching it? By the by, on enquiring at two stations for "bronzed purple," they knew nothing of that name, but on my describing the substance, they showed me a substance called "steel blue." I suppose this is the paper described by Mr. E. J. Wall.—G. C. H. W.

5369. **View Meter.**—Having a desire to make a view meter as described by E. J. Wall in "Photographic Procedure," page 276, vol. xiv., I should be much obliged for the name of firm who would supply the double concave lens of 1½ in. focus and the double convex lens of 3 in. focus. Information will be greatly appreciated by—MFLANESIA.

5370. **Lamp Shade.**—I wish to make a photographic lamp shade. Will some one kindly give me hints as to procedure, both with paper and glass? I work half-plate size, and so direct transparencies from negatives would be too small. Should I make enlarged transparencies or print whole-plate transparencies direct and mask out the margins of the plates? The lamp is an ordinary table lamp with metal frame.—JNO. A. EDEN.

5371. **Enlarging Apparatus.**—I am about buying a daylight enlarging apparatus. Which would I get better results with, a Multum-in-Parvo (Lancaster's) and my own Instantograph special 1891, or with a combination Multum-in-Parvo?—KROC.

5372. **Tint Negatives.**—Can tint negatives be intensified after being fixed? If so, which is the best formula? How to make up same easy for a beginner.—NEV. B.

5373. **Burnisher.**—I bought it second-hand (a Knox one). The roller is smooth nearly and will not grip cards to take them through; also the face is scratched.

How is easiest and best way to put the two in working order? Answer will greatly oblige.—NEVILLE.

5374. **Density of Negatives.**—Would any reader oblige by giving reason and how to alter as below? When developing I cannot get enough density, always getting tint negatives in portraits, landscapes, etc. I use 1lford and Thomas's plates, and give 7/8, 1/10, and 1/12 sec. f 14 and f/18 sec., and use 10 per cent. solution as follows: Pyro 12 or 14 minims, ammonia 10 minims, bromide 10, and increase ammonia gradually per ounce of developer—still a want of density. Do I need still to increase pyro, as I find by trying to get density with ammonia I sometimes fog plates and lose all detail and the plates are lost. I got a new lens, f 7 by 5 in. focus, a French half-plate R.R. lens. Could it be fault of lens? Any assistance will greatly oblige. Also if negatives can yet be intensified sufficiently to print from.—NEVILLE.

5375. **Burnisher.**—Can any one inform which is the best make of burnishers—Vever's, Tylar's, Sutcliffe's, Lancaster's?—JOAN.

5376. **Lanterns.**—Will any brother amateur kindly inform me which of the following lanterns is the best—Lancaster's Amateur and Home lantern, sold at £1 11s. 6d., or Optimus, at £1 10s.? Also if both will enlarge good from a quarter-plate negative to whole-plate, and to about 20 by 16, and all intermediate sizes? Any information on same will oblige.—JOAN.

QUERIES UNANSWERED.

Jan. 1.—No. 5337.

" 8.—Nos. 5348, 5349, 5350, 5352, 5354, 5357, 5360, 5361, 5364, 5366.

ANSWERS.

5326. **Copying Hymns.**—Using 1lford ordinary plates, good diffused light indoors, near a south win-

dow, and $f/6$ stop, the exposure would be four to ten seconds. I would, however, recommend "Copper" to use a bromide lantern plate, such as Fry's, or Ilford Special, for the negative, and double or treble the exposure. He will get much clearer letters, and on a denser ground, than with a comparatively rapid plate like Ilford ordinary. In any case, the developer should be strong in pyro (or its equivalent), and well restrained. The lantern slides may be made from these negatives on chloride plates, with magnesium ribbon. These plates give great clearness and brilliancy.—GREENWOOD.

5326. **Copying Hymns.**—I should fix the book against the wall and focus to the size required, then I should pull my dark slide only a quarter of the way out, uncup the lens and expose for a quarter of a minute, then cap the lens and pull the dark slide a little further out, expose again and repeat; you will get four or five different exposures on the plate. Develop, and see which gives the best result.—SAGITTARIUS.

5335. **Rodinal.**—I have tried this by exposing a pair of plates under exactly the same conditions, and developing the one with pyro, the other with Rodinal. Except for a slight difference in colour, the negatives turned out quite the same. I have also tried it successfully for lantern slides and for bromide prints. It is by far the most convenient developer for taking on tour, being highly concentrated.—J. C. O.

5347. **Yellow Paper.**—Has "Newonian" left his prints long enough in the toning solution? Ilford paper turns first yellow in this bath, and then purple. If the first washing be insufficient, some spot may remain yellow for a long time. Prolonged washing, previous to toning, seems essential.—GREENWOOD.

5351. **Passing the Customs.**—I have passed plates repeatedly through French, German, Belgian, Austrian, and Italian customs without the least difficulty. I had a roll-holder last year, and it was not interfered with. If "France" is not glib at languages, printed labels in French, German, etc., which can be readily bought, setting forth the contents of the boxes, are a great assistance.—GREENWOOD.

5353. **Wood Dishes.**—The following is a water-tight preparation, if that is what you want:

Common brown resin $\frac{1}{2}$ lb.
Beeswax 2 oz.
Melt together in tin pan (preserved meat tin will do). When quite fluid, run solution all over where required. Wood must be quite dry and warm.—CODECK.

5353. **Wood Dishes.**—Resin 1 lb., beeswax $\frac{1}{2}$ lb., melt together in an old condensed milk can or similar vessel and smear evenly over your dishes with a piece of warm iron. I have two 12 by 10 dishes coated like this, and the sink in my dark-room is a hard wood packing case lined with the same mixture. I got into trouble over the latter, as my wife caught me levelling the bottom with a flat iron. The wood must be warm and dry before being coated.—SAGITTARIUS.

5355. **Bromide Developer.**—
A.
Hydroquinone 40 gr.
Metabisulphite of potash 20 "
Water 10 oz.

B.
Potass. hydrate 30 gr.
Carb. soda $\frac{1}{2}$ oz. avd.
Sulphite soda 1 "
Water 10 "

Equal parts of each. Works with Fry's, Eastman's, and Ilford (slow) bromide papers.—CODECK.

5356. **Ready-made Emulsion.**—Tylar, of Birmingham, sells a print-out gelatin-chloride emulsion for plates and opals which might suit you. You can get almost any tone with it. I know of no dealer who sells ready-made emulsion for printing by development.—S. C. B. (Genoa).

5358. **Enlarging.**—The mode of calculating the number of times of photographic enlargements given in first edition of Wall's "Dictionary" is utterly wrong. That given in the second edition is not sufficiently explanatory. In photographic enlargements the "number of times" means the number of times each side of the enlargement is longer than the corresponding side of the original. Thus a 3-times enlargement from a quarter-plate will measure 12 $\frac{1}{2}$ in. by 9 $\frac{1}{2}$ in., and when using a lens of $\frac{1}{4}$ in. focal length the distances between lens and sensitive surface and lens and negative must be 18 in. and 6 in. respectively.—R. D. S.

5358. **Enlarging.**—Three times linear and nine times superficial are one and the same thing. To enlarge three times linear (three diameters) with a 4 in. lens, the distances will be 18 in. and 6 in.—GREENWOOD.

5359. **Lens Focus.**—I can use a $\frac{1}{4}$ in. focus lens with my half-plate Instantograph without taking in any of the tailboard.—S. C. B. (Genoa).

5362. **French Weights.**—
22 grammes = 5 drachms 9.46 grains.
24 " = 6 " 10.32 "
26 " = 6 " 41.18 "
31 " = 7 " 58.33 "
33 " = 8 " 29.19 "
36 " = 9 " 15.48 "
42 " = 10 " 49.06 "

I hope this will satisfy "An Amateur Photographer;" the fractions of grains could be very well left out of photographic purposes. Why not buy the gramme weights?—S. C. B. (Genoa).

5362. **French Weights.**—A gramme is equal to 15.43235 grains, therefore 22 grammes \times 15.43235 = 339.5117 grains. Multiply your other items the same way. A drachm = 60 grains. Grains, troy, avoirdupois, and apothecaries, are equal.—SAGITTARIUS.

5363. **Collotype.**—If "Querist" has an abundance of patience and a fair knowledge of photography, there is no more interesting and beautiful process than colotype. The principle is simple enough to understand, but rather difficult to practice, many details being omitted by text-books on the subject. I shall be glad to help "Querist." Address with Editor.—G. A. L.

5365. **Spolt Negatives.**—"Litho" can utilise his spoiled negatives (glued together) by turning them into weights, or, after they have been thoroughly cleaned into opalines. Messrs. Perry Lund, Bradford, will supply him with "Vista" mounts, as is, per box, for framing them. By means of Le Page's glue I fix an old cork to one or more of the old negatives, and, after covering with orange paper, they serve excellently for pressing out sensitised paper.—Jno. A. EDEN.

EDITORIAL.

SPECIAL NOTICE.—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us before TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

H. WOOD.—Merely have the camera packed in a zinc-lined case, and send per P. and O. steamer. There are also several forwarding agents who would probably undertake the job for you.

LEWIS.—We have printed on the paper you sent us, and have obtained good prints of a rich purple-brown tone, with the ordinary acetate bath. Your fault lies in printing too quickly and over-toning.

CAMERIST.—Your letter to hand, and we are pleased to note that you see the error of your ways. You sin in good company, as you suggest; but no man is infallible. Always pleased to hear from you.

KENNETH.—We have only received eleven prints from you. (1) Water a little too hard, but the effect good, (2) fair, (3) good, (4) fair, (5) poor, (6) good, (7) good, (8) missing, (9) poor, of no artistic merit at all, (10) fair, (11) fair, over-toned, (12) poor. The contrasts between your lights and shadows are far too great, and it strikes us that most, if not all, the negatives would be improved by intensification. Superior results could be obtained by printing slowly under ground-glass on gelatin-chloride paper, and giving the print a matt surface. No. 1, if printed rather deeply on chloride paper, would form a very effective study. With more careful printing your work would be fully up to competition standard, and we shall hope to welcome you as a competitor. The Illustrated Supplement is presented gratis.

G. C. H. W.—(1) The want of detail is to some extent due to hatching, but it is also due to using too much reducing agent—pyro or quinol—in developer. (2) Good, though a little less foreground would have been an advantage. (3) Over-exposed and flat. (4) See note to 1. All your prints are over-toned, but otherwise quite up to our standard.

C. MILLARD.—We have forwarded your letter to the Secretary of the Leeds Photographic Society, as it is a personal matter, of no interest to our readers generally.

F. H. RUEL (Canada).—We should recommend you to obtain the hand-camera. Glad you like Mr. Wall's articles.

R. V. HARCOURT.—We should certainly enter a bromide enlargement of the print you send in Inland Scenery Competition, for which it is more suitable than river. It wants a little less foreground.

BOTTOM STEP.—The lens named is worth the money asked, and is capable of turning out good work.

CHAS. R. BEAUMONT.—We hope to start in a week or two a series of articles on the subject you name. You give us no idea of what price camera you want. Cannot our advertisement pages help you?

ROBIN.—Your prints had been mislaid. (1) The reflections in water too white. (2) Taken the wrong way of plate. (3) Good. (4) The perspective of the shed is fearful. (5) Cut half inch off foreground. (6) Cut one inch off foreground; camera not held straight. (7, 8, 9, and 10) Good. (11) Is the snow real or artificial? (12, 13, and 14) Good. Do not use pink-tinted paper, and pay a little more attention to your foreground, which tends to bareness and emptiness. The hand-camera you name is a good instrument, though a little bulky and heavy.

INSTANTO.—We should recommend you to get A. F. V. A. LLOYD.—The glasses are not made now, but you might get one from Caplatz, Chénies Street, Tottenham Court Road, London. They are oblong concave glasses blackened on their posterior surfaces.

A. M. WILSON.—We have to-day examined the camera, and we think you will not be wrong in getting one; it strikes us as a capable, well-made instrument.

SEE-SAW.—You will hardly obtain what you want without some outlay. We publish this week a note on a new lens by Dallmeyer, which is just what you require, but we are not sure that it is yet on the market. Of course, you are aware that the longer the focus of

the lens the larger the more distant objects, but whether you would get the enlargement you require without the new lens is a matter for you to decide.

J. H. HODD.—(1) A sheet of ground-glass should always be between the source of light and the negative. (2) You should not use a flash-lamp, but burn some inches of magnesium a few inches from the ground-glass, keeping it in motion all the time. This is more likely to give you satisfaction than the flash-light. (3) You can estimate the exposures for enlarging by the aid of an actinometer, such as Stanley's. (4) Enlargements should always be made on special slow plates and special lantern developer; not using these may be the cause of your failures.

J. RIDGWAY.—As we have used the solution for at least fifty or sixty times, and always with success when we attended to the instructions, we saw no reason for inserting your answer, which appeared at the time to us to be actuated by some ulterior motive, and the perusal of your present letter rather supports that idea by its offensive tone.

H.—The camera would probably work satisfactorily with carriers, as you suggest.

F. J. R. HAMMOND.—The execution of your idea is so good that it is hardly necessary to suggest any improvement in it. It would probably have looked better in sea-green carbon tissue or in a rich warm brown matt-surface paper; the idea is extremely pretty and well carried.

AUBURN.—We are sorry that your letter has not been answered before; we are at present unable to find your prints, but are having a good search made, and as soon as found they shall be sent you.

G. LEWIS.—There are three carbonates of soda, sodium carbonate Na_2CO_3 , $10\text{H}_2\text{O}$, sodium bicarbonate NaHCO_3 , and sodium sesqui carbonate. The last two are not of the least use for developing. Washing soda may be considered an impure sort of carbonate containing usually some hydrate and a variable quantity of water. It has been said that the men are paid for making this not by time but by the amount of water which they can put into it; it is a convenient but not a strictly scientific agent to use.

ICONOCLAST II.—We should imagine that the negative wants intensifying. As a rule negatives developed with quinol require to be denser than others. We should prefer to see the negative before advising you to treat it in any way. (3) There is no trouble in intensifying the plates; the ordinary mercurial method answers satisfactorily. (4) The print is much over-toned, and the spots are probably due to some chemical having touched the paper.

E. GRIFFITHS.—Thank you for the print. We will return your prints, unless we hear to the contrary from you.

W. G.—(1) Encaustic paste may certainly be relied on as a preservative against damp. Warm the paste and the negative and apply by means of a soft rag, then polish off the excess with a clean rag. (2) The glistening spots which have appeared on your negatives are silver stains caused by the absorption of the free silver from the ordinary sensitised paper. This would have been avoided had you used varnish or encaustic. They are extremely difficult to remove without damaging the image. Soaking the negative in the acid fixing bath for some hours will sometimes remove them, but the usual method of using iodide and cyanide of potassium is by no means easy or safe.

A. RUSSELL.—If when your prints are drying you are careful to roll them albumenised side outside, you will not have the trouble of cracks again. The widening of the faces is due to distortion caused by the unequal expansion of the paper. You should when sending out a set of prints be careful to print them on paper which has all been cut the same way of the sheet; the expansion will be the same in all then, but your difficulty could be got over by a little more careful work in mounting, that is, by not having the prints too wet.

NEVILLE.—We think you will find the "Dictionary" of great use to you. (1) This print is over-exposed, and the developer did not cover the plate properly; the print is also over-toned. (2) This is very flat and poor; it would perhaps be better if more carefully printed on gelatin-chloride paper.

CODECK.—We did not insert the answer to Query 5347, as we were uncertain whether you intended it as a joke or a slip. If gelatin-chloride paper was soaked in the mixture you suggest for an hour or two, we venture to think that there would not be much of that print left. Thanks for the others, which go in in due course.

G. W. M.—We are always pleased to report on anything sent us. The firm you enquire about are perfectly reliable and may be depended on not to shove you off with rubbish.

IGNORAMUS.—(1) Good, but a little longer exposure would by no means have hurt it. (2) Ditto. (3) Not so pleasing by a long way. (4) Good. (5) Poor. (6) The whole is too crowded to form a picture. (7 and 8) Are both very good on the whole. There is not the slightest doubt that you ought to turn out some very good work when you have a large camera. We do not think there is much to choose between the two instruments you name.

J. E. ELLAM.—We publish the result next week, and hope to get the slides ready for the round the week after. When the unsuccessful work will be returned we cannot say with certainty.

F.—We have examined one of the instruments which you ask about, but, at the same time, we have not actually worked one. The report of Eder is quite sufficient to satisfy us that it is a first-class all round ens.

INSTANTOGRAPH.—(1) Yes, the developoids answer quite as well as dry pyro and can be modified the same. There is bromide with them, we think. (2) We think that gelatino-chloride paper is the best all-round one to use, but to pick out the best of the commercial makes is beyond our powers, nor do we think it at all possible to signalise one as the best.

JARROVIAN.—Beard's "Eclipse" single lantern slide carrier is the nearest to dissolving which we know, and we think that you would be perfectly satisfied with its action and the effect. You will find the advertisement in our last issue. We have used it with satisfaction.

W. H. PRATT.—We certainly think that A is the instrument which will enable you to turn out the best pictures. We have used one for some time.

OMICRON.—We can trace no letter at all from you, but are pleased to do our best for you now. (1) Any ordinary collodion means a plain solution of pyroxyl in a mixture of alcohol and ether; the usual strength is about 4 grains to the ounce. Two per cent. of cadmium bromide means that to every 100 minims, grains, drachms, or ounces, 2 minims, grains, drachms or ounces of cadmium bromide are to be added. You need not trouble yourself with the difference between liquid and solid measure. (2) Cut your paper into the sizes you want, and pin it to the lid of an empty plate box on the bottom of which you have sprinkled a few drops of strong ammonia. (3) The albumen is merely the whites of eggs whipped to a froth and allowed to subside and then used; fresh eggs give the best results, and unless you keep fowls we should strongly advise you to buy your paper ready made, as at the present price of new eggs it will come very dear, it is also at all times a messy job. (4) The resinated paper described by us gives better results, we think, than many others; it is not now made commercially. (5) To produce a good grey the only thing to use is Indian ink with some white pigment such as sulphate of barytes. For terra cotta we believe that Venetian red and Indian ink, will make a good colour. (6) We should strongly advise you to use a single lens for landscape; there is a very general feeling, and we think a right feeling, that the R.R. is not the lens for landscape; (7) It certainly is possible to shade the sky, and there is a shutter which will shortly be on the market which will do everything you want.

S. H. BARTON.—The medals are now in hand, but we cannot state when they will be delivered, however.

P. B.—We will keep your letter before us, and try and satisfy you.

Sale and Exchange.

RULES.

CHARGE.—Twelve words or less for Fourpence

Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

ADDRESS.—All advertisements (which can be received up to Wednesday morning, 9 a.m.) and other communications having reference to the "Sale and Exchange" column must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

CARRIAGE must be paid on all apparatus sent for report, and they will be returned carriage forward.

DEPOSITS.—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

COMMISSION.—A charge of 2½ per cent. will be de-

ducted from all deposits whether a sale is effected or not. Minimum charge 1s.

PAYMENT. All payments are to be by cheques or Postal Orders, made payable to **Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.**

ADVERTISEMENTS can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 5d. to cover postage.

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REPORTING.—Apparatus may be sent to the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

Cameras, Lenses, etc.—Whole-plate camera, two slides, brass-bound, leather bellows, extension 20 in., all movements, with lens suitable for portrait and views.—Geo. Roberts, 13, Pakenham Street, Belfast.

Lancaster's whole-plate Instantograph, two brass-bound dark-slides, R.R. lens and tripod, £5; Lerebours whole-plate lens, £2 10s. 6d.; whole-plate French portrait lens, £2 10s. 6d.; half-plate camera, three double slides, £3 10s.—J. Biddle, 97, Medlock Street, Manchester.

Hand-Cameras, etc.—Dot hand-camera for sale, in wooden case, filled with plates; price 21s.—Arrow-smith, Hadley Hurst, Polegate, Sussex.

Crouch's Presto, nearly new; cost £6 16s.; sell £5; carries 24 plates, splendid lens; sample print, one stamp, or several on deposit; reason of sale, no time.—Murray, 45, Glenam Road, Clapton.

Platino-type Co.'s Key hand-camera, quarter-plate, R.R. lens, six double dark-slides, view-finder, used twice; cost 5 guineas; price 4 guineas; approval.—Bevan, 51, Carisbrooke Road, Hastings.

Lantern.—Wood's Euphaneron, 4 in. condensers, 4-wick W. lamp, blow-through jet, lens with ruby cap and two lenshening tubes, in case, complete, perfect; cost £5; price 50s.—Winter, St. James's Road, Kingston-on-Thames.

Lancaster's enlarging lantern, 5 in. condenser, almost new, 50s.; Omnigraph detective camera, 12s. 6d.; Cyclists' lantern slide camera, six slides, lens, and stand, 25s., cost 84s.—M. Newhouse, 90, Victoria Terrace, Lancaster.

Lenses, etc.—5 by 4 Optimus R.R., perfect condition, with stops, in case, 23s.; Diamond hand-camera, takes 12 plates 3½ by 2½, 15s.—W. Johnson, 5, 1 Elham Road, Gravesend.

Cabinet portrait lens, London Stereoscopic Co.'s rapid landscape lens, whole-plate, Hockin-Wilson whole-plate wide-angle lens; £4 10s.—Wratislaw, Braunston, Rugby.

Quarter-plate lens, iris, instantaneous and pneumatic time shutters, screwing into same, all perfect; bargain, 20s.—Tims, Welshpool.

Negatives.—Quarter-plate negatives, views for slide making 2s. 6d. dozen; sample negative, 6d. free.—Photographer, Pontfaweh, Towy, Wales.

Sets.—Best London-made half-plate camera, three double slides, R.R. lens, tripod, cost 6 guineas, equal new; only 90s.; approval.—14, George Street, Stroud, Glos.

Lancaster's 1891 half-plate Instantograph camera, slide, tripod, R.R. lens, new; 60s. 6d.—John Slade, Slad Road, Stroud.

Lancaster's quarter-plate International camera, with two double backs, stand, shutter, and canvas case, condition as new; price 40s.; Editor's approval if necessary.—No. 257, AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London, E.C.

8 by 5 mahogany camera (by Ross, London), one double and two single backs, with half-plate and 5 by 4 carriers and folding ash tripod, as new, 40s.; Dallmeyer's whole-plate view lens, list price 90s., for 60s.; 5 in. compound condenser, mounted in brass cell, never used, 15s.; Robinson's Luzo hand-camera, for 2½ in. circular pictures, with roll of film, quite new, cost 94s. 6d., for 40s.; owner deceased.—G., 2, Crofton Terrace, Kingstown.

Half-plate International, single and double slide, three Tylar's metal slides, with adapter, all in good

case, and tripod; price £3 15s.—G. L. Gosling, 111, Leytonstone Road, Stratford, E.

Quarter-plate camera, The Baroness (by London and Paris Optical Co.), perfectly new, and every possible movement; Eastman's latest roll-holder, to fit above; also 5 in. Beck's R.R. lens, iris diaphragm; 4-fold tripod, 16 in. when closed, all in solid leather lock-up case; the lot for £8 10s.—Thomson, Laurel Bank, Halifax.

Sundries.—AMATEUR PHOTOGRAPHER, complete, 1888, 1889, 1890, 1891; what offers cash? lantern slides, or foreign stamps.—Hillsdale, Fakenham, Norfolk.

Scott's warm air saturator and specially adapted mixed jet (also suitable for gas), little used, 50s.; can be seen in use if desired; Griffiths' half-plate lantern slide camera, complete, and half-plate 8 in. focus f/6 Euryscope (French make).—B. J. Grover, East Lynn, Woodberrydown, Finsbury Park, N.

"Our own Country" (Cassell and Co.), unbound, cost £2; exchange for Pearson and Denham's half-plate lantern slide reducing camera, books, or apparatus.—Percy Morris, School Hill, Lewes.

Camera case, lined green baize, with strap and lock and key, nearly new, take half-plate camera, three backs, etc.; 7s.—Jones, Gazette Office, Malton.

Davenport dark-room, fitted with seven extra shelves, sink, waste pipe, etc., also Lancaster's superior half-plate burnisher, new, cost 21s.; Lancaster's new Ruhralux patent ruby lamp, new, cost 10s. 6d.; Lancaster's quarter-plate Instantograph camera, lenses, dark-slide, two Tylar's dark-slides, instantaneous shutters, tripod, camera case, etc.; must be sold; what offers exchange, sundries, or cash separately? object, leaving country.—David Mitchell, Bridge Street, Banbridge, Ireland.

One Booth's 4 in. mitre cutting machine, one 2 in. ditto, with extra knife, and two corner cramps; exchange for good photographic lens.—Dyer, Strand, Exmouth.

AMATEUR PHOTOGRAPHER, 1889, 1890, 1891, complete, 5 by 4 single slide square, half-plate burnisher, guinea Camunilux; exchange lantern slides.—Hewertson, Hill Top Lodge, Ulverston.

WANTED.

Backgrounds.—Pair of backgrounds, exterior and interior; price and particulars.—Drury, 2, Wellington Street, Lincoln.

Cameras, etc.—A Lancaster's combination Mutton in Parvo, about 15 by 12, must be in good condition; approval.—Breck, Winnington Park, Northwich.

Half or whole plate camera (without lens), tripod, and case, latest improvements, cheap for cash; approval.—Pollard, 46, Green Street, South Shields.

Hand-Cameras, etc.—Hand-camera, for plates, on approval; state size, weight, and lowest price; Talmer 5 by 4 preferred.—Miss Galloway, Thirkley Park, Thirsk.

Key camera, latest pattern; approval; deposit.—Full particulars and lowest price to E., 23, Halford Road, Richmond, Surrey.

Good hand-camera, Ronch's, Shew's, Ideal, preferred; exchange gent's 18 ct. diamond ring, cost £7.—17, Sedan Street, Walworth.

Shew's Eclipse hand-camera, or Abraham's; approval; deposit.—H. Molyneux, Haines Hill, Twyford, Berks.

Lantern.—Bintrial lantern, for limelight, mahogany body, brass fronts; will exchange new Rational bicycle, 52 in.—John Lowden, 37, Maryland Road, Stratford, Essex.

Lenses, etc.—Half-plate R.R. or doublet lens, 7 in. focus, by good maker.—Dugdale, Leominster.

Negatives.—Loan or purchase, negatives of subjects of popular and artistic interest, scenery, etc.; size about cabinet.—Ashton and Sons, Church Walk, Southport.

Roll-Holder.—Eastman's roll-holder, 5 by 4, good condition, latest pattern.—Wallis, 75, St. George's Place, Glasgow.

Eastman's roll-holder, quarter or half plate, must be cheap.—Rev. Webster, Homeleigh, Hereford.

Sets.—Half-plate Instantograph set, two or more slides, and case, cheap.—Ernest Fox, Basingstoke.

Darlington Photographic Society.

ANNUAL EXHIBITION.

OPEN CLASSES FOR PRINTS AND SLIDES.

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The AMATEUR PHOTOGRAPHER

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Office: 1, Creed Lane, Ludgate Hill, London, E.C.

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FRIDAY, JANUARY 22, 1892.

[PRICE TWOPENCE.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—Dallmeyer's Tele-photographic lens—Ladies' Photographic Club—Holidays with the Camera—Photographic Reporter—Index to last Vol.—Queries and Answers—New Postal Photographic Club—New Society for Hexham—Society Reports—Postal Exchange Club.

ARTICLES.—Photographic Procedure (Wall)—Composition—Light and Shade (H. P. Robinson)—The Study and Practice of Art in Field Photography (A. Horsley Hinton)—Making Lantern Slides—Enlarging (Ammer Tugher).

EXHIBITIONS.—Louth and District.

REVIEWS.—Optics of Photography (Traill Taylor)—The Modern Odyssey—The Idler (Jerome K. Jerome).

QUARTERLY EXAMINATIONS IN PHOTOGRAPHY.

NOTES FROM THE EDINBURGH CENTRE.

SOCIETIES' MEETINGS.—Ashton-under-Lyne—Birmingham—Blackheath—Camera Club—Cornish—Darlington—Derby—Dewsbury—Edinburgh—Fairfield—Great Yarmouth—Guildford—Haltwhistle—Holborn—Huddersfield—Leicester—Lewisham—Liverpool Camera Club—Liverpool Y.M.C.A.—Manchester—Newcastle-on-Tyne—North Kent—North London—North Middlesex—Oxford—Putney—Southsea—Sutton—Ulster.

QUERIES AND ANSWERS.

EDITORIAL.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All Communications should reach the Editor by Tuesday.)

TERMS OF SUBSCRIPTION—

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POSTAL UNION	6s. 6d.	13s. 0d.
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TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.)

"Amateur Photographer" Monthly Competition No. 32.—"INLAND SCENERY, WITH OR WITHOUT FIGURE." Latest day, January 25th.—Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, February 12th.)

WE have received a note from Mr. T. R. Dallmeyer, calling attention to a letter of his which appears in our contemporary the *British Journal of Photography* on the subject of his new tele-photographic lens, and we are glad to have this opportunity of trying to put right a little error. As we recorded in our notes on Mr. Dallmeyer's paper, it had been suggested many years previously to utilise a Galilean telescope to obtain photographically, large images of distant objects, but Mr. Dallmeyer says in his letter:—

"A Galilean telescope is not a photographic lens. The corrections, the manner of use, and disposition of the pencils of light, in employing the Galilean telescope as a telescope, are essentially different from employing the same instrument as a photographic lens, and, as such, of course it is practically useless. I conceived the advantage that would accrue in constructing a photographic lens having the property of a very wide range of foci in itself by slight adjustments of the lens and focussing screen, accompanied by other advantages such as have, I believe, never existed in any photographic lens hitherto constructed. In your leader of the 19th of September, 1873, a part of which is quoted in your last issue, you omit, curiously enough, the concluding paragraph, which you particularly pointed out to me at the Camera Club after my lecture. It is as follows:—'Opticians have done all in the way of making wide-angle lenses demanded by photography or permitted by theory; but it might be worth while to devote some attention to the opposite side of the question, and see if a combination could not be made which would project on the ground-glass of a camera of moderate length an image of three or four times the apparent magnitude of objects in nature. That such a lens would create useful applications for itself cannot be doubted.' That, Mr. Editor, if you will allow me to say so, was worthy of your practical acquaintance with what had been accomplished in photographic lenses, and a valuable hint as to a novel direction for those competent to work in, in order to advance the science of photography."

As a matter of fact it cannot be denied that whilst somebody else may have suggested the construction of such a lens, Mr. Dallmeyer has been the first to practically work out, in a form which brings it within the reach of all, a lens which is strictly speaking a photographic lens, but which also possesses at the same time some of the features of a telescopic objective, the two being, as a rule, totally distinct, as in a photographic objective rapidity, or the working aperture, is always a consideration. We hear that the lens will shortly be ready commercially, and we shall then take the opportunity of examining a specimen, and giving our readers an illustration of the working power of the same.

SOME mention has already been made in our columns with regard to the formation of a Ladies' Photographic

Club, and the subject having again been brought to our notice with an appeal for assistance, we shall be pleased to receive the names of any ladies who are willing to support such an institution, and if there is evidence forthcoming of sufficient interest in the matter, we will convene a meeting at our offices, and assist the matter as much as possible.

WE have received so many letters with regard to the "Holidays with the Camera" prints, etc., that we are compelled to answer them here rather than per post. All the prints will be retained for one month, and then those who desire it may receive their prints back on forwarding stamps to cover postage. All prints will be criticised, and many of them we hope reproduced in a special number, announcements in respect to which our publishers will make later on.

WE have also received several queries as to the December number of the *Reporter*. This appeared as usual, and contained the criticism of all prints sent in to our Monthly Competition No. 30. Our publishers will willingly send a copy of the same to any reader who has any difficulty in obtaining it, on his remitting the price in stamps.

WE publish with this week's issue the index to the last volume, and, in explaining its tardy appearance, we would point out that as we gave a four-page illustrated supplement last week, the post-office authorities might have objected had we put the index in as well. It was ready and waiting, but it does not appear till this week. We are always glad when our readers find fault with us, but in the case in point we think that some have been rather hard upon us.

OUR "Queries and Answers" columns have always been a source of considerable assistance to beginners, and of amusement to some of our older readers. We purpose, we need not say, to continue them, but we intend to exercise also the right to withhold any answer which seems to us to savour of prejudice or personal spite. In many instances, we are aware, those of our readers who take sufficient interest in the paper to help it by answering queries, do so honestly and fairly, but there are black sheep everywhere. In some cases, too, an answer is withheld because another, perhaps more explicit or of greater conciseness, was received. When we withhold an answer it is done in all honesty of purpose, not, as suggested by some one last week, because we favour one more than another.

MR. H. EYRE, of Crowborough, writes us that he has still some vacancies in the New Postal Photographic Club, and will be glad to hear from anyone desirous of joining. Applicants need only forward a specimen print to Mr. Eyre, and the print will be returned if desired.

MR. JOHN GIBSON, jun., informs us that it has been proposed to form a photographic club for Hexham and district. Meetings will be held fortnightly, and summer outings will be arranged if the club is carried through. Mr. Gibson's address is Battle Hill, Hexham, and he will be pleased to receive the names of any intending members.

WE have received one or two letters from the secretaries of societies, pointing out that it is almost impossible, in some cases, to send off reports of meetings so that we receive them by the first post on Tuesday. We are always willing to meet them as far as lies in our power, and always endeavour to insert a report the same week as received, but they would lighten their labours considerably if they would

let us have the same as early as possible, and would make the reports brief. We give a sample of what we mean, first of all showing a notice as sent us, and the same as we should print it:—

Blank and Blankshire Photographic Society.—Wednesday, January 20th, 1892. A regular meeting of the above society was held on the above date in Cogers' Hall, Coster Street, Mr. Domuch in the chair in the absence of Mr. Dolittle, the President. The minutes of the last regular meeting were read and confirmed. Mr. How proposed, Mr. When seconded Mr. Was, of Blank, Mr. Were proposed, Mr. Will seconded Mr. Wood, of Dulltown, as members of the society, to be balloted for at the next meeting. The Treasurer, Mr. Money, presented his report, showing a balance in favour of the society, and on the motion of Mr. Domuch, seconded by Mr. Talk, the accounts were received, and a vote of thanks passed to Mr. Money for his past services. Mr. Talk proposed that Mr. Dolittle be elected President for the ensuing year, Mr. Domuch seconded and it was carried unanimously. Mr. How proposed, and Mr. Will seconded that Mr. Domuch be elected Vice-President for the ensuing year; it was carried unanimously. Mr. Dolittle returned thanks, and promised to do all in his power to further the interests of the society. Mr. Domuch thanked the members also for his election, and said he would do his best to support the President. After votes of thanks to the other officers, the meeting adjourned.

This is something like what we receive. Now let us see what we put in the paper:—

Blank.—A meeting was held on the 20th inst., Mr. Domuch presiding. Messrs. Was and Would were elected members. The Treasurer's report was read and passed, and showed a balance to the good. Messrs. Dolittle and Domuch were elected President and Vice-President for the ensuing year.

One gentleman suggests the founding of a prize for the secretary who sends in the most legible report; we would rather, however, give one for the most brief report. The above example will be sufficient to show those hardworking secretaries the style we want. Votes of thanks are ruthlessly scored through, as everybody assumes that such are given. It is unnecessary also to give the proposer and seconder of any motion; it is quite sufficient, as a rule, if it is stated if the motion is carried or not. There are so many societies, that the full reports of all their meetings would fill the pages of our paper alone. We shall therefore be obliged if the leading feature of all reports is brevity.

A VACANCY occurs in the Postal Photographic Exchange Club conducted by Mr. R. W. Copeman (Kuklos Cottage, Henstridge, Blandford), and he will be pleased to hear from any lady or gentleman desirous of joining such. This Club is rather different to the ordinary circulating portfolio, as it not only provides for the circulation and criticism of prints, but for exchanges amongst all the members. The first one started by Mr. Copeman twelve months ago has been so successful that a second one was started in the summer. He will be glad to forward full particulars on application.

WITH reference to our notice of Messrs. Adams and Co.'s "pantoscope," on p. 55 of our issue last week, we understand that Mr. Tylar considers the same an infringement of his patent "Lanternoscope," and legal proceedings are being taken on the one hand by Mr. Tylar, and Messrs. Adams and Co. also defend the suit.

Greenock Camera Club.—The second exhibition of this club, which was opened on the 4th inst., was formally closed on the 9th. A crowded audience assembled to hear the lecture and witness the lantern entertainment given by Mr. T. N. Armstrong, of Glasgow, the subject being "A Caravan Tour through the Trossachs." Mr. Jas. Graham presided. After the exhibition, Councillor Dr. Cluckie, in a humorous and telling speech, formally declared the exhibition closed. We understand that the club have greatly benefited, so far as new members go, by this exhibition.

Enlarging.

By AMMER TUGHER.

THE number of questions which have recently been asked in these columns with reference to enlarging prompts me to believe that a relation of my experiences in that direction will not be without its share of appreciation among a large section of the votaries of the "black art."

The first question, naturally, is that of apparatus. I had already made for myself a hand-camera for plates 5 by 4, and I soon developed a burning desire to see how some of my pictures would look when enlarged to 10 by 8. Economy of both money and space was a great consideration. I first tried a large box made into a kind of magic lantern, using a large plano-convex lens and a duplex lamp, but it took up so much room, besides my condenser not properly covering the plate, that I soon sought for other methods, and ultimately evolved the apparatus I am about to describe.

I went to a confectioner's, and obtained some chocolate boxes therefrom: I fancy I paid $1\frac{1}{2}$ d. each for them. These I cut up into five pieces of wood 2 in. wide and $10\frac{1}{2}$ in. long, and six pieces 2 in. wide and 12 in. long. There was also one piece $\frac{1}{2}$ in. wide and $10\frac{1}{2}$ in. long. With these I made three frames, and having allowed $\frac{1}{2}$ in. in the long pieces for the thickness of the wood, their internal

measurement was 12 by 10 in. It will be noticed that one piece of wood was only $\frac{1}{2}$ in. wide. That was in order that the frame might be made as in the diagram, where the narrow piece is put at AB, for a purpose which will presently be explained. For joining the wood I used glue and the small brads I took out of the boxes in taking them to pieces, as ordinary nails would split the wood.

Having made the three frames, I next made two camera bellows 12 by 10, the detail of



FIG. 1.

which I need not go into, as camera-bellows making was so lately dealt with in the AMATEUR PHOTOGRAPHER. Suffice it to say that I made them of brown paper, blackened inside with a solution of black aniline dye, and strengthened with one thickness of the cheapest muslin I could buy. The card-board for making the folds I begged from the drapers, as they are always ready to give away empty card-board boxes. The bellows were made so as to rack out to 18 in. and 30 in. respectively, but this measurement must depend entirely upon the focal length of the lens to be used.

I then got six sheets of very thick brown card-board, $12\frac{1}{2}$ by 10, from Thorburn's, stationers, in St. Bride Street. I mention this firm because the board is, I think, chiefly used in bookbinding, and cannot be obtained at ordinary stationers', except, perhaps, to order.

My first care was to find the centre of two of the sheets, easily done by drawing two diagonal lines from the four corners. In the centre of one I cut a hole not quite 5 by 4 in., and then glued a strip of board over and under the hole, and thus made, with another overhanging piece over those, a couple of catches into which I could slide my negative when using the apparatus, as in the section (fig. 2),

where AA² represent the glued strips, and BB² the boards, and the dotted line C a negative in position. This board so prepared I glued into one of the two perfect frames, which I shall call No. 1.

In the other board I cut a circular hole, just large enough to take the R.R. lens I use in my camera. This board I glued into the other perfect frame in the middle. This frame I call No. 2.

I now joined frames Nos. 1 and 2 together, by means of the shorter bellows, while the longer bellows was used to join Nos. 2 and 3, hence the reason for putting the board in the middle of No. 2. I now had a sort of double camera, as in section in fig. 3, where A is the plate, B the lens, and C the bromide paper.

When the paper bellows were in position—it will be noticed that they were glued *inside* the frames—and dry, I still had to arrange the receptacle for the bromide paper. This was easily done. I took four strips of wood $\frac{1}{2}$ in. wide and 12 in. long, and glued them in frame No. 3 in such a way as to make a groove in which two thicknesses of the cardboard could slide. Another groove at the bottom completed it. It will now be seen why only $\frac{1}{2}$ in. wide wood was used for the top of this frame.

Two of the pieces of cardboard were then carefully cut out, so as to leave a hole $9\frac{1}{2}$ by $7\frac{1}{2}$ in. each. (There is yet one sheet left. This may have a hole cut to any smaller size to which it may be desired to enlarge.) Into one I fastened a piece of frosted glass, with the frosted side flush with the surface of the board, to serve as a focussing screen, while the other was used as follows:—Having focussed the picture on the glass, which should be slid into the camera with the other cut-out card in front of it, so as to have exactly the same position in the groove as the bromide paper would occupy, I put one of the uncut boards flat on the table. On this I placed a sheet of paper,



FIG. 2.

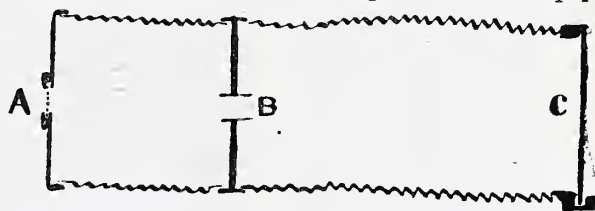


FIG. 3.

film uppermost, and on this the cut-out board, which, by overlapping the paper on all sides, held it in position. The whole could then be slid into the groove, and the exposure made.

(To be continued.)

An Amateur Photographer to the Front.—Last Saturday was an eventful one at the Birmingham Gas Office, as it marked the last day of service there of Mr. A. C. Townsend, who for fourteen years had acted in the capacity of counter cashier under the Birmingham Corporation, and was leaving that position to take up the post of cashier and general manager to Mr. W. Tylar, 57, High Street, Aston, Birmingham, whose ever-increasing business compels an extension of his staff. On leaving, some sixty-four of his fellow workers presented him with a valuable set of bronzes, and expressed a wish for his future welfare, and also regret at losing so genial a companion, who by his annual exhibition of holiday photographs caused such pleasure. We understand that Mr. Tylar's visit to the Continent last season bore such good results that he intends devoting more personal attention to travelling both at home and abroad.

Liverpool Camera Club.—The President's "At Home" takes place on Wednesday, 20th inst., when an exhibition of competition and members' work will be on view. The "grotesque dress ball" takes place on February 8th.

Composition, and Light and Shade.

Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.

By H. P. ROBINSON.

CHAPTER XXI.

I SHALL here recur to the subject of middle tint, for the purpose of taking a general view of the various modes of arranging this important branch of light and shade; as upon the strength of the middle tint depends, in a great measure, the general look of the picture. By the middle tint is meant the medium between the extreme dark and extreme light; but as such a scale is too gross to take in all the gradations lying between so opposite qualities, I have, for the sake of clearness, made use of intermediate links, viz., half dark and half light. If we take a ground of a shade composed chiefly of half dark and middle tint, and introduce the strongest lights, we shall find it necessary to introduce a portion of half light to spread and break down their harshness. If the extreme dark is placed upon the middle tint, it will by contrast render it more in union with the half light; if it be placed on the half dark, a breadth of shadow and softness will be the result. Harshness of effect in treating pictures upon a dark scale arises, most commonly, from the want of sufficient quantities of middle tint and half-light, thereby causing the principal light to be too much defined; as we frequently observe in the works of Michael Angelo Carra-vagio.

Rembrandt and Correggio excelled all others in the introduction of demi tints, which illuminate their deepest shadows. In their works and in nature we perceive the lowest tones of middle tint are removed from blackness, either by their warmth, or the introduction of some positive black or blue, to produce an appearance of air floating within them.

The exact quantity of middle tint must depend upon the arrangement of the subject and the taste of the painter; but it is absolutely necessary, to prevent it from always interposing betwixt the extreme light and extreme dark.

This invariable gradual declination of the light into the shadow, is one cause of the insipid look of most of Vanderwerf's works, nor is it, as Sir Joshua Reynolds justly observes, consonant with the effects in nature. Variety

demands some portion of the composition to be sharp and cutting; and richness is to be obtained only by a continual changing of portions coming sometimes dark and sometimes light off the ground; this endless variety in nature can be imitated only by this intricate weaving of the outline with the background: so that the same sound principles which guide the conduct in the treatment of the whole may be traced in the management of the detail.

Middle tint, in pictures painted in a light key, ought to be in some measure robbed of its consequence, either by the introduction of reflected lights, or positive half lights; for if it occupies too large a portion of the canvas, the work must of necessity lose its characteristic feature. We must therefore depend upon some other agent to prevent the picture being flimsy, and void of that solidity which is so inherent in the most delicate of nature's works. Accordingly we find small sharp darks introduced, the value of which has been noticed in another place; and (what is of the utmost importance) a sharp edge to the lights and half

shadows throughout the whole.

The light pictures of Teniers and Cuypp are full of this precision in the touch, a flatness in the shades, a sharpness in the handling, and a distinctness in the most approximate colours; by this alone a general breadth can be preserved, and the most splendid light (even of a sky) filled with a multitude of forms.

In this notice of middle tint or ground of the picture, I may appear to have recapitulated what has already been said in other parts of the work; but my anxiety to put the student in possession of every information in my power urges me to place it before his eyes in every point of view. The management of light and shade, as relates to a whole, ought to be always present in the student's mind, as it is from inattention to this alone that a work is often destroyed in its progress. In the commencement of a picture those parts only are strongly defined, or marked in, which are of the greatest importance; and the other portions are left in a broader and less obtrusive state. But in the progress of the work the proper subordination of the latter is often injuriously diminished.

The general character of an object is its most important feature, and this is to be preserved at the price of every other quality, if it cannot be retained upon other terms; as it is this which is imprinted on the mind of every one, and which is therefore paramount to all its other properties. If the object does not possess this feature upon the canvas it cannot attract or interest the spectator, as in all proba-

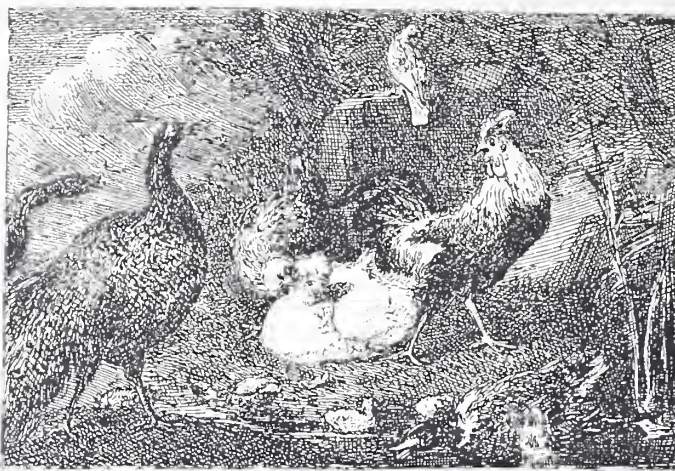


FIG. 55.—HONDECOETER.

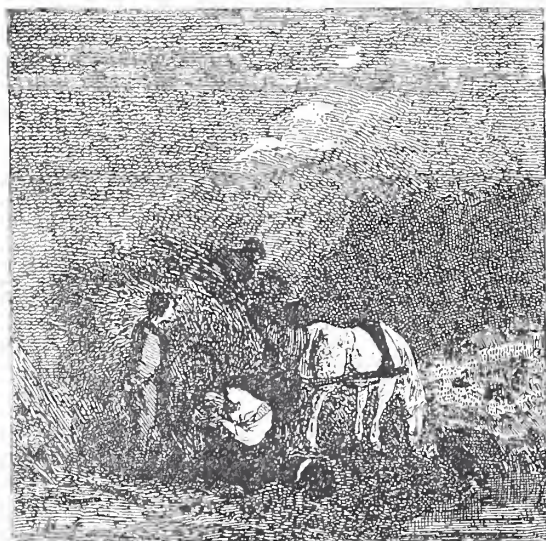


FIG. 56.—WOUVERMANS.

bility its other properties are unveiled except to the artist alone, who has examined it attentively. For example, in a portrait, when we see the head alone finished, it often pleases more than when the work is complete; our attention is led involuntarily to the countenance, which would be the case were we introduced to the original; and this preponderance which exists in nature, must of necessity become less when, in the finished work, the other portions of the picture have received a greater consequence. The importance of the countenance, the general character of the flesh, viz., its transparency, breadth of local colour, luminous appearance, etc., may be all lost from the injudicious introduction, in the other parts of the picture, of lights, darks, and middle tints, in the artist's anxiety for richness of effect, or in his wish to give splendour and harmony by the strength or variety of his colours.

In sketching a landscape from nature, when we have time only to put down the leading features, detailing such objects alone as are striking or interesting, we find the spectator often more satisfied from feeling a corresponding sensation from the truth of the representation imprinted on his mind, than when, in a more finished work, the painter has destroyed the great breadth and luminous character of the sky for the purpose of mixing the shadows of the clouds

men's bosoms," and without which his greatest labour is but industrious trifling. The character of an object depends upon a particular colour, a particular touch, a particular concentration or diffusion of light, according to its form or substance; to obtain which ought to be the constant study of the student, as it is the language of his art, and the only language universally understood.

In this chapter Burnet does not allude to the illustrations he has provided, preferring to leave a few towards the end of his book to exercise the analytical faculties of the student. When he has gone carefully through the preceding chapters and assimilated their contents, the student should test his knowledge by criticising pictures, good or bad, and endeavouring to come to a satisfactory conclusion as to why they are beautiful or otherwise. As an easy example let him consider why the pigeon was placed where it stands in fig. 55,

and why the particular form it takes harmonises with other lines in the composition; also why the light formed by the white hen is repeated in the sky.



FIG. 57.—TENIERS.

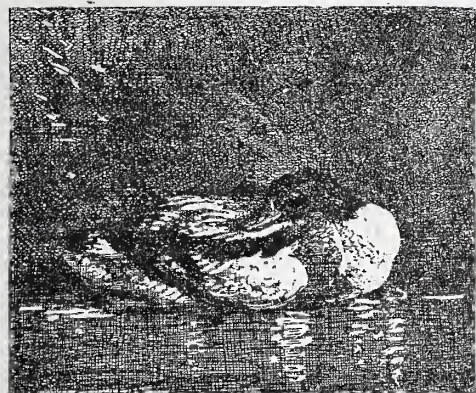


FIG. 58.

with the trees, etc., to counteract flatness, or when he has subdued the strength of his colours for the sake of taking off their harshness. When he begins to define the different parts for the sake of finish, unless he has the treatment of the picture as a whole constantly before his eye, the expansive look of the sky, the fresh and decided appearance of nature in the colours, the gray tones and soft markings of the aerial perspective may all disappear, and give place to requisites of an inferior kind.

In all objects in nature there is something predominant, and which alone has struck the observation of every one. If the artist gives that, he brings his object at once home "to



FIG. 59.—FRANK HALS.

Lantern Exhibition at Cookstown, Co. Tyrone.—On Wednesday evening, 18th inst., a very successful exhibition of photographic views was given in the Assembly Rooms, by Mr. J. B. Gunning-Moore, J.P. The views shown were entirely photographic. The first lot were a number lent by the Editor of the AMATEUR PHOTOGRAPHER. The second lot were a selection of instantaneous views by Mr. John Morison, jun., President, Glasgow and West of Scotland Amateur Photographic Association. The third collection was by Mr. Jas. H. Hamilton, Secretary, Belfast Camera Club. The last selection comprised a quantity of slides the work of Mr. John Faulkner, Glenarney, Cookstown, representing local scenery. One slide thrown on the screen represented men clearing the roads of the snow, with children pelting them with snowballs. This was a very pretty snow scene, the plate being developed according to information derived from the AMATEUR PHOTOGRAPHER of the previous week.

Photographic Procedure.

By E. J. WALL.

Author of the "Dictionary of Photography."

SECTION IV.—THE DARK-ROOM (*continued*).

In treating of the varieties of lamps for artificial light the difficulty is not what to put in but what to leave out. The number of commercial lamps is enormous, and one and all have some feature recommending them, either cheapness, or high prices, simplicity or complexity; and to determine as to which is the best is beyond my powers. Lamps may be divided into four varieties—gas, paraffin, candle, and electric lamps.

Gas Lamps.—Gas is very convenient, as it is instantly lighted and instantly extinguished; it does not smell, smoke, or go out just at a critical moment, yet, on the other hand, many of us have not gas handy to the dark-room, or possessing it do not have it laid on, for some reason or other. There are several varieties of these lamps in the market, differing slightly from each other. Some of the latest forms (Marion's, Reynolds and Branson's, etc.) have a small bye-pass flame, which never going out instantly allows one to obtain white light, very convenient for the lantern-slide maker or bromide paper worker. Marion and Co. have a special lamp which is constructed to burn either gas or spirit. In the lamp a ring of asbestos is fixed a little above the tube of the burner. This asbestos is dipped in water, then sprinkled with a sodium salt, and on lighting the gas a very clear and brilliant yellow flame results, which gives a very bright

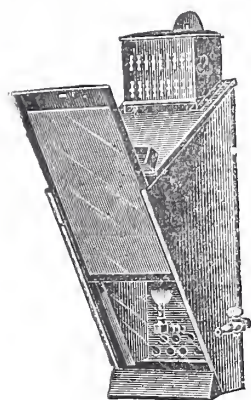


FIG. 97.

but safe illumination. For further safety a chimney or yellow glass is also provided. One form of lamp by Messrs. R. and J. Beck is shown in fig. 97.

Paraffin Lamps.*—These again take every variety of shape and form, according to the fancy of the maker; and they vary in form from the humble triangular at 2s. 6d. to the ornate and elaborate at 21s. or more. Possibly if I jot



FIG. 98.

down what I consider the features I should look for in a lamp, they may be of service. First, the oil reservoir should be quite distinct from the lamp proper, or at least the greater part of it should be outside the chamber in which the flame burns; this prevents the oil becoming heated, lessens the risk of explosion, and prevents creeping of the oil and consequent smell; secondly, the reservoir should be capable of being filled without removal from the lantern, thus allowing one to fill up even when the flame is burning, if desirable; thirdly, it should be possible to regulate the height of the wick, and consequently that of the flame, from the outside. These are the three essentials. And further I require that the lamp shall not be japanned outside, as experience has taught me that this invariably

emits a distinctly unpleasant odour when the lamp is new;

* We regret that we have been unable to show the figures of some of the leading lamps, in consequence of delay in applying for the loan of the same from the makers.

it is an unnecessary and useless pandering to prettiness. Further, there shall be no light able to reach the eyes of the operator when the lamp stands on the working bench, there shall be also no internal glass chimney, and it shall be possible to obtain orange, red, or deep ruby illumination at will.

A special form of hanging-lamp, made by Jonathan Fallowfield, is shown in fig. 98.

One of the faults in many lamps is that there is an insufficient air supply; this means intense heating of the lamp, smoky flames, poor light, and sometimes stench and flying smuts.

Candle-Lamps.—These are convenient, and much preferred by some, as the illuminant is not a gas nor a liquid, but, on the other hand, should the candles not be specially manufactured for this purpose our experience is by no means satisfactory, as the great heat engendered by burning a candle in a small confined space is quite sufficient to make an ordinary hard household candle burn out in less than half an hour. A convenient little travelling candle-lamp is the

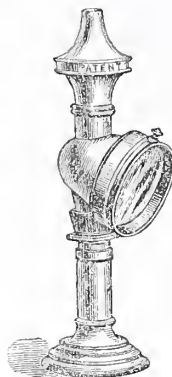


FIG. 99.

"Holiday," of Benham and Froud, or a more stately and stationary friend, the "Perfection," of the same firm, shown in figs. 98, 99, 100.

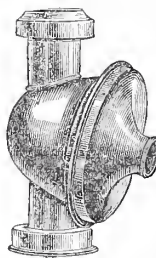


FIG. 100.

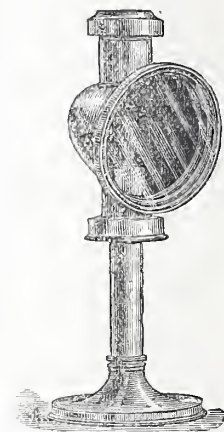


FIG. 101.

Messrs. Edwards and Co. have also a small travelling candle-lamp, which is convenient, and takes up but little room, and both firms supply special hard candles for use in the lamps; in fact, those supplied by Messrs. Benham and Froud have a melting point of about 300 degs. F., and it will be found by no means easy to get them to burn in the open air.

Electric Lamps.—There are several forms in the market; one a special lamp manufactured by the Schancheff Electrical Company, another which is manufactured by a wholesale firm. Both these depend upon some form of liquid battery, but this last few days a new lamp has been brought to my notice by one of my brother amateurs, which is extremely small, and is an accumulator which can be recharged when necessary from any storage station for a nominal charge of sixpence. These are not specially constructed for the dark-room, but are called "Pitkin's Surgeon's Lamps," and the small glow-lamp has, therefore, to be covered with ruby or orange paper, or liquid ruby, before use. It is possible, too, for any one with a small knowledge of electricity to rig up three or six chromic acid cells quite sufficient to light up a three or five candle-power lamp.

(To be continued.)



Manchester Amateur Photographic Society.—The annual exhibition of members' work, which in past years has proved so successful, is to be held from the 9th to the 13th of February inclusive, and lantern lectures by the members are to be given every evening.

The Study and Practice of Art in Field Photography.

By A. HORSLEY HINTON.

IV.—ON LINES LEADING INTO THE PICTURE, ROADWAYS, ETC.

GIVEN that the object of primary interest in a composition occupies its typical position, somewhere near to the centre of the picture, it will nearly always be found desirable that the principal lines in the combination fall so as to converge towards that object, thus leading the eye, as it were, from the margin to the centre of the picture.

In a flat or marshy country a very important factor of this description is found in those lines which, commencing in the foreground, may converge towards a more distant point, such, for instance, as a river path, a brook or river itself, the fringe of rushes, which accentuate, either with bright light or continuous shadow, the course of the stream which it has overgrown, whilst in low-lying lands liable to encroachment of sea or river, or land reclaimed from the water, those substantial earth-works, grass-grown and with foot-worn summits, often come grandly into a composition, and fulfil this same function in a bold and striking manner.

Such physical features as the above, be it noticed, rarely form a right line for any great distance together, but curve and zigzag irregularly as they recede and diminish into distance.

The brook, in wending its way across the land, turns its course here and there as it finds the soft earth gives least resistance and the river winds in like manner, but on a grander scale; so, too, the rustic road or the footpath that grows rather than is made, is in much the same way tortuous and serpentine, avoiding rough places or watery or broken ground, oftentimes making a wide detour rather than breast a little hillock.

Thus it may be noted that when these and similar features form receding or approaching lines, in whichever way we choose to regard them, conveying the attention into the picture, they usually assume a zigzag or waving figure, and it is often in its most wavering mood that such a line is of greatest use to us in our selection of a subject.

It is a very important matter to bear in mind that the eye requires something to lead it *into* the picture as well as to lead it to the principal object, and a straight hard line even if it served this purpose, offends the senses in other ways, or even betrays its purpose, whilst a broken zigzag or an easy sweeping curve, is most powerful to lead or invite attention rather than to impel. A hedgerow or any conspicuous object running directly across the picture will at once make itself felt as an obstruction, and make us conscious of our natural desire to get *into* the picture; such an object seems to form a barrier and to cut us from the scene presented. But form a gap or a little space in the hedge, and you feel at once the sentiment of entering into the picture. Hence the painter is prone to introduce a pathway, a sheep-track, or the ruts formed by the waggon-wheels, even though such may not actually exist, because of their power to induce the interest and lead into the picture, and whilst we as photographers have it not in our power to voluntarily introduce these useful features, it should make all the difference whether we are quite clear as to how best to avail ourselves of their presence, for a roadway, etc., wrongly placed may mar an otherwise pleasant picture.

Moreover let it be observed that the double function of leading into the picture and leading to the chief object will in most cases resolve themselves into one; for if the line or set of lines be of any importance or weight in the com-

position, the point to which they lead will become the centre of interest, and the most important object must not be far away or the attention will be divided.

Thus, with such an instance of country road as we have in mind, there is an ancient well or horse-pond close to the road, rush-grown and flowery, hemmed in with vegetation, and a broken fence, against whose worn and tottering posts cattle and horses for generations past have rubbed themselves for comfort; a little further on some strong gorse-bushes, and then the cottages and hayricks, which, with tall, shady elms and brighter ash-trees, form a pleasing and attractive group, and made still more so when some cattle or a flock of white geese come round the haystacks on the sunny side; but the furrowed road, which commences well enough by the horse-pond quickly runs off to the left and passes out of the picture, and being a strong feature the eye is involuntarily led away, and cannot but follow it. The effect of that road upon the senses is too strong to be disregarded, so that between the cottage group, which seems in a sense cut off, and the roadway, the spectator receives a restless, disturbed feeling which should never be the case in a good composition. Of course, in such a case the photographer is helpless, and he has no alternative but to let the subject be and pass on, and we ardently wish we could be the means of persuading our too eager camera man to leave the subject, which is not wholly fit quite alone, for if he can but reconcile himself to give up a pretty scene because it does not compose well, he will have small cause to regret it, and probably a little further on we may get a bend of this sameroad which will run towards the centre of the picture, still retaining the cottages and haystacks. We shall have to do without certain foreground matters which had pleased us so in the former position, but their omission is a smaller evil than an ill-arranged and disturbing whole. It is a compromise such as we shall have to make on nearly every occasion, and to the beginner not an easy task. There may, however, be consolation in the fact that in very many instances, if we wait until the sun has shifted, the different arrangement of the shadows and the altered lights may have the effect of obliterating the troublesome features and introducing new and desired lines. Thus, in the subject which we have endeavoured to picture above, a chance shadow might cover that portion of the road which seemed to lead us out of the picture so that it became inconspicuous, whilst across the grass and gorse-bushes bright patches of light caught up the interest which the road now only conveyed a little way, and led right up to the trees and the stacks, only it is not often we can wait a whole day's changing light, nor is it by any means often that our waiting would be well rewarded.

The accompanying sketch (page 60), which we made whilst crossing a Kentish common some time ago, may serve as an example. The rough piece of winding road practically *makes* the picture. Imagine for a moment this road erased, and the scene would at once cease to interest. Notice that the road, or at least the strongest part of it, commences near the centre of the fore part of the picture, as though one might step upon it and follow it along to the gateway. In middle distance the same gateway becomes the key-note of the composition; the eye travels by an easy curve at no time far from the middle of the scene to that gate, which, although so insignificant in itself, becomes the object of primary interest. But it is not isolated, for close on the right a large tree at the edge of a coppice, and on the left a barn and more trees, come in as it were to support the chief object; but beyond these there is nothing to disturb attention, and interest falls off altogether to the edges of the picture. Notice also that towards the point where the gate is, most of the important lines converge. The sky-line, formed by

the distant hills, the trees, hedgerows, road, and clouds, radiate from it, and thus make it a strong centre. It is not to be supposed that the scene is perfect in all respects, but it will answer our present purpose, as an instance of a



The Common-road Fig. 1

trifling object becoming the principal one by reason of the arrangement of lines and its position; and also the utility of a roadway well placed. But further it might serve us as a lesson which is hardly apparent in the sketch here given, namely, to how very great an extent the picturesqueness of a scene depends on the position of the light.

We first crossed that bit of wild common-land about mid-day in the course of a long ramble, and although the open country was very pleasant, and the rich green grass, not yet scorched by summer heat, was broken by patches of yellow blossoms, and clumps of sturdy thistle began to show signs of their silken crowns of mauve and white, and amongst the clusters of rank grass and darker rushes butterflies fluttered to the droning music of a myriad insect wings, yet there was nothing to make us pause. The edges of the road were not high enough to cast much shadow, and in tone it was little lighter than the coarse grass on either side, and scarce an inch of shade to vary it. Against the yellow and grey distance the trees looked weak and shadowless, there was little contrast anywhere, and the gate we were approaching was so light in colour as to be lost against the distance—pleasant enough for enjoyment of bright sunshine and the odour of wild flowers, but not such a scene as would suggest a picture. But returning by that road when the sun was nearing the horizon everything assumed a more striking aspect. The distance was a flat blue with little detail, and the trees and hedges came dark and strong in contrast, and their lengthened shadows made the nearer portion of the common light by contrast; all the grassy plain was dappled with little shadows, and the thistles and rushes looked more sturdy and taller as they came away from the brighter distance of the light grass around; the road had become very light as compared with the surrounding grass, and at once arrested the eye and led it on to the gate and stile, when a veil of hazy light intervened between it and the remote blue hills, so that it stood out a tiny object but in strong relief. In like manner very many comparatively uninteresting stretches of country become changed into delightful pictures, if looked at towards the sun when it is low. Contrasts are intensified, and obtrusive or tiresome details are lost, whilst notably the sky effects, if we can catch them, are more striking.

Photographers have been very ready to see this, and whilst in earlier days it was generally supposed that the most desirable position for the sun was at the operator's back. Latterly we seem somewhat in danger of getting a monotony of against-the-light effects

In our studies of landscape in a flat country we shall often get desirable opportunities for picture-making, even when the sun is well behind us; and when, in a future chapter, we ask our readers' attention to the subject of horizontal lines, we shall find the utility of having a bright sun to the right or left of us.

There is a very great deal to be learnt, and much that is picturesque, in the roadways themselves, such as one may meet with on any country side, but which appears too often to have escaped notice; such trivial matters, for instance, as the deep cuttings in the soft roadway made by the broad wheels of the farm waggon and the succession of circular imprints of horses' hoofs. It is a source of some surprise to us that cart-ruts have not more often been seized upon by photographers, and made to figure in photographic pictures, for in some lights and circumstances there is hardly a more effective foreground subject.

But our studies of country road-ways, and some remarks upon their treatment in pictures, would carry us far beyond the limits of the present chapter, so that we must rein up on our road and let the cart-ruts run on into the next chapter.

MAKING LANTERN SLIDES.

EDER AND VALENTA give the following summary of the method of making lantern-slides, in the current number of the *Photo. Corresp.* :—

"We mention here merely the method of making these charming studies, in answer to numerous questions which have been addressed to us in our school. If it is desired to make transparencies by contact printing in the frame, then gelatino-bromide plates are mostly in use, although the carbon and the chloride of silver emulsion processes give as a rule more delicate results.

"When, however, it is required to reduce in the camera, bromide plates are almost always used. Unfortunately, these plates are somewhat liable to give coarse images. The old wet collodion process was undoubtedly excellent for this purpose, but the necessary experience and knowledge to work this process is by no means common to the latter-day amateur. Very delicate and beautiful coloured transparencies are to be obtained by the use of chloro-bromide plates; they are as a rule warmer in tone and more delicate in deposit than those on bromide plates, but the chloro-bromide plates are certainly not so sensitive as the bromide, but more so than the pure chloride plate, and are therefore suitable for reducing in the camera. Edwards' special plates are frequently used for this purpose, but similarly acting plates can be made after Wellington's method slightly altered by Eder and given in his "Handbuch."

"Chloro-bromide plates are best prepared from the following formula :—

Silver nitrate	10 parts
Citric acid	10 "
Water	100 "

This solution is to be added to the following gelatine solution previously heated to 70 deg. C :—

Chloride of sodium (salt)	2 parts
Bromide of potassium	4 "
Citric acid	10 "
Gelatine	12 "
Water	100 "

The emulsion should be well shaken, and after ten minutes should be poured out into a dish. When the emulsion has set, it must be broken up and washed for a day in running water, when it may be used for coating."

Mr. Robert C. Murray, who has been for some considerable time the manager of Messrs. J. J. Griffin and Sons' photographic department, has now opened new premises at No. 8, Garrick Street, W.C., for the manufacture and sale of photographic materials and apparatus. Mr. Murray has a special agency for the Royalty cameras and lenses, the Nys dry-plates, and Tylar's novelties, and has a full stock of most of the leading dry plates, papers, etc.

Exhibitions.

LOUTH AND DISTRICT PHOTOGRAPHIC SOCIETY'S SECOND ANNUAL EXHIBITION.

THIS exhibition was opened by Alderman Fowler, ex-Mayor of Louth, on the 14th inst., and the exhibition was thrown open free to the public at 6 p.m. Between 600 and 700 photographs were displayed upon desk-like tables covered with baize and arranged down the centre and round the side of the large hall. Commencing with the non-members' exhibits, the fine work of Mr. J. W. Wade first arrests attention. His "At the Fountain" is one of the most taking pictures in the entire collection.

C. Court Cole is represented by four of his now well-known and finely-executed Oxford interiors.

J. Gale, London, has a dozen examples of his style on view, the sweet simplicity of "Sleepy Hollow" securing for it the highest place in general approval. "Through the Driftway to the Fold" was also very much admired.

Edgar G. Lea has only five quarter-plate pictures to uphold his reputation, but they go far to prove that size is not indispensable to good work. "By the Old Mill" is a perfect little gem.

J. B. Wilkinson, jun's, two pictures of "Sand Dunes" show what art taste can do with a most unpromising subject.

Louis Meldon's instantaneous pictures are the best of the kind in the exhibition, his "Divers" proving a great centre of attraction.

"The Hall of Audience," by Cyril S. Cobb, is the best of his six very fine examples.

C. B. Wright, of Nottingham, rather spoils a very good exhibit by the obtrusive colour of mounts.

S. N. Bhedwar's "Feast of Roses" is too well known to need more than naming.

Of Mr. Ralph W. Robinson's five exhibits "A Primrose by the River's Bank" is a perfect example of what simple taste and perfect art can produce. His "Pedlar" and "Suspensions" were also much admired.

The frost scenes by Paul Lange fully upheld that popular worker's reputation.

Mr. R. Armatage was also strong in frost pictures. His "Mistletoe Girl" was somewhat flat.

Lyddell Sawyer shows three of his wonderful candle-light series, "The Last Rehearsal," and "The Toper" exciting most curiosity and comment. For pose and quiet simplicity "In the Twilight" is probably one of the finest examples of this great master.

Joseph Chamberlain, Tunbridge Wells. The groups shown by this exhibitor show great skill in posing. "Hiring a Donkey" is the best of the set; but, despite their quality, six or eight pictures with the same background are apt to become a little wearying. Besides several very good figure studies, Mr. Smart shows "Fishing Boats leaving Whitby Harbour" and "Salisbury Cathedral," which are his best.

R. Pearson's flower studies are of the highest order, and show that he has mastered fully the art of reproducing the true colour value of very difficult subjects.

Miss Hardman. Eight pictures show careful work and some promise.

Miss E. Annesley's work is very fair, but "Juliet" would have been improved by more care in vignetting.

Mrs. Hignett shows some very pretty landscapes. "Swinging on the Gate" and "Milking Time" are the best.

Of the local exhibits, Mrs. S. F. Clarke, Mr. C. James, and the Hon. Secretary naturally made the greatest show. Of Mrs. Clarke's exhibit her four Shakesperian studies, "Playing the Lady," "Curiosity," "After Mass," "Laughing Eyes," and "The Village Blacksmith" were among her best figure studies. Her landscapes are entirely local, and proved a great attraction. Mr. S. F. Clarke, L.D.S., was strongly represented in a series of Swiss and Savoy views, his "Seven Ages of Man" and "Wrestlers" coming in for a large share of attention.

Mr. Clarence James exhibited entirely in platinotype and of high order. His cloud studies and his latest new picture, "At the Pantomime" prove a great attraction. The Society is to be congratulated in possessing so clever a professional guide as Mr. James.

Master Lucas shows fine local views.

Mr. Hutchins' pictures give promise of future good work.

Mrs. East's work is pretty, and we hope to see her take a higher place in next year's exhibition.

Mr. C. H. Bentley, "In Tennyson's Land," shows work that is not only good but useful, as forming a permanent record of a locality that must ever prove of interest to the lovers of the great poet and the public generally.

Colonel Ravshav's hand-camera work is especially good.

Rev. J. M. Coates exhibits enlargements from quarter-plate negatives. His bits in Lincoln are especially good.

Rev. C. W. Whistler exhibits good work. His most striking pictures are "Mark" and "Noon-day." This worker also shows stereo work. One slide of frost is among the prettiest things of the exhibition.

Among the young exhibitors of promise is Ernest Keal, whose quarter-plate picture shows careful selection and good execution.

Mr. and Mrs. Pickering's exhibit is well mounted and looks effective. Mr. E. H. Foreman has rather marred good work by slightly over-printing.

Mr. H. Foreman shows great artistic taste in the selection of his views in the Lakes and Isle of Man. He is a worker of promise, and should soon prove a strength to the society.

Captain Fowler shows some very fair hand-camera work.

Mr. James Mason would have improved his exhibit by a little careful selection. A few of the weaker pictures removed would have greatly strengthened this exhibit.

Mr. V. T. Crow is a careful worker of promise. His "In Clover" is clever.

For first year's work, Miss Bradwell promises well; but her work would be greatly improved by greater care in printing. Cracked prints destroy any beauty a picture may have originally possessed.

The attendance at the private view in the afternoon was 315, on which occasion Mrs. S. F. Clarke offered afternoon tea to the members and their guests. In the pleasant character of hostess she was assisted by a bevy of charming young ladies and pretty little girls.

In the evening 637 passed through the exhibition; total, 952; which for a town of only 10,000 gives a good idea of the interest felt outside the society in the second annual exhibition of the Louth and District Photographic Society.

Camera Club.—On Thursday, January 28th, a series of lantern slides will be shown, described by Lieut.-Colonel Gale, after which other slides by members will be exhibited.

The Birkenhead Photographic Association have issued an annual report, from which it appears that they have not only done good work in the past year, but that the association is now in a firmer and more satisfactory condition than heretofore.

East London.—This young and promising Society, which now numbers close upon fifty members, held its first annual dinner and presentation of prizes at the "Three Nuns" Hotel, Aldgate, E., on the 12th inst., in which some fifty persons took part, Dr. Warwick (President) presiding. After the dinner and the usual loyal toast, a well-arranged programme was submitted, in which a few of the members took part in both vocal and instrumental music. The President read a letter from Mr. C. Harrison, L.C.C. (who regretted being unable to attend), in which he stated that he had followed up the art of photography as an amateur since 1851, and he knew of nothing so capable of showing the customs of nations as photography, and welcomed the formation of such a society in the East of London. In proposing the toast of "The Society," the President wished to couple with it the name of the energetic Hon. Secretary, Mr. Wilkinson. The Secretary, in reply, thanked the members and friends who so cordially received his name coupled with the toast, and gave the history of the Society since he took over the secretaryship in June last, and was pleased to say that a room at the Town Hall, Shoreditch, had just been secured as permanent headquarters. In reference to the prizes, it was gratifying to say that the expenses, which were rather heavy for a young society, had been defrayed by friends, and were awarded by an expert in photography (Mr. C. W. Hastings) at the exhibition in November last. The President then proceeded to present the prizes to the successful candidates (already reported). The toast of "The Officers" was proposed and responded to by Mr. Sedgwick. Mr. Barnard (a visitor), in an effective speech, proposed "The President," which was drunk with musical honours. "The Visitors" toast, by Mr. Stone (Vice-President), was responded to by Mr. H. C. Gould, who referred to the birth of photography, and in tracing its progress alluded to the pleasure it afforded the nation to see faithful reproductions of faces and places dear to them. "Auld Lang Syne" finished up a very pleasant evening.

Reviews.

The Optics of Photography and Photographic Lenses. By J. Traill Taylor. Published by Whittaker and Co., 2, White Hart Street, Paternoster Square, E.C. Price 3s. 6d.

It has been an open secret for some time that Mr. Traill Taylor had in preparation a book on photographic optics, and great things were expected. In his preface the author states that "some of it is already familiar to readers of the *British Journal of Photography* and its Almanac. . . while other portions are collated from my contributions to the Society of Arts, the *Photographic Times*, the Camera Club, and various other London and provincial societies." This is obvious to any one at all conversant with photographic literature, but at the same time it has all been carefully revised or rewritten and brought up to date.

Mr. Traill Taylor opens his book with a brief exposition of "what constitutes photographic optics—nature and properties of light," and it is written in such a manner that we have no tedious explanations of all the properties of light, but merely just sufficient to properly allow the reader to grasp the subject. "Photographic definition, real and ideal; forms of single and achromatic lenses" is the next chapter, and Mr. Taylor does well, we think, in clearly setting down what is "photographic definition" and what it is not. The title of the next chapter will help many a tyro: "The Cause of an Inverted Image." "Spherical aberration" is the next subject treated of; this stumbling-block is very clearly pulled to pieces. Chapters on "the nature and function of the diaphragm or stop," "properties of deep meniscus lenses," "compensating single lenses," "the optical centre of single lenses," "the optical or focal centre of a combination," make up what we may call the introductory portion of the subject, and then the author discusses the historical forms of lenses, and we are glad to see that this part is not burdened with mathematical formulae or measurements for grinding of lenses, which possess but little general interest and utility.

It would be impossible for us to examine the whole of the work in detail, but testing lenses, finding the equivalent focus, depth and diffusion of focus, mounts and cells, lens grinding, testing, selecting, improving, using lenses, are all included. Nor are we disappointed in finding even the new tele-photographic lens of Mr. Dallmeyer mentioned, Jena glass, lantern optics, etc. But we must confess to a feeling of regret that Zeiss's new lenses are so cavalierly treated; practically nothing is said about them, and of these we had hoped to see some opinion expressed.

The book is singularly free from errors, well printed and bound, and is written so plainly and clearly that we do not think the merest tyro will have any difficulty in mastering its contents, and having done this he is quite certain to be considerably better informed as to what is and should be in photographic optics than before.

The Modern Odissey or Ulysses up to Date. With thirty-one illustrations in collotype. Published by Cassell and Co., Ltd.

This book may be considered as part of the diary of an up to date Ulysses, who has travelled all over the world with his eyes open. Some of the contents had appeared in the *St. James's Gazette* and the *Illustrated Sporting and Dramatic News*, and, considerably amplified by fresh matter, they are now issued in book form. The author, who, by the way, is sufficiently modest to refrain from giving his name altogether, has by no means an unobservant eye, and this, combined with a ready pen, a good descriptive power, and some dry humour, makes up a very readable account of his travels. Starting from Holyhead and thence to Dublin and Queenstown, we are led across the herring pond to New York, Chicago, Niagara, Canada, to the western coast of America, and thence to New Zealand, Australia, China, India, Egypt, Greece, the Bosphorus, Crimea, across Europe home. The narrative is a little disjointed and ends somewhat abruptly, but will certainly wile away an idle hour or two. The collotype illustrations are all of them good, though some evidently from by no means perfect negatives. We do not gather that they are from negatives taken by the author, as in his prefatory note mention is made of several "firms of photographers who have kindly given permission for their pictures to be reproduced."

The Idler. Edited by Jerome K. Jerome and Robert Barr. Published by Chatto and Windus. Price 6d., monthly.

Mr. Jerome K. Jerome, in sending us an advanced copy of the first number of the *Idler*, says in his note:—"The idea we have

in view is to establish a magazine, every page of which shall interest or amuse. We shall make no attempt to guide the universe or to reform humanity. We only hope to be a pleasant chum to a man when he is smoking his pipe, and is desirous of forgetting his own affairs—an agreeable companion to a woman in those few intervals when she has nothing better to do, and no one better to talk to. In short, we shall aim at catering for that large and influential class—the moderate idlers." Mark Twain, Andrew Lang, Luke Sharp, J. F. Sullivan, Cynicus, Bret Harte, I. Zangwill, J. Bernard Partridge, backed up by Jerome K. Jerome, make a formidable array of "Idlers," and if we have neglected the preparation of copy in order to peruse their works, it is their fault and not ours. The printing and get-up are good, the illustrations superb, and the matter more than excellent. Some of the illustrations are certainly from Kodak shots, and the composite portraits of the leading politicians, given under the name of "Choice Blends," will interest every photographic worker.

To the man who wants a little light recreation after wearing his brains out developing, printing, or toning, the *Idler* can be heartily recommended.

Apparatus.

WE noticed last week Messrs. Percy, Lund, and Co.'s waterproof backing paper for mounting gelatino-chloride prints, and we now have a specimen of the same firm's Ivory Royal boards, which will doubtless find favour with those of our readers who wish to further complete the operation of mounting.

Quarterly Examinations in Photography.

WE regret that in consequence of the number of applications for copies of the syllabus we have been unable to send them out, but we hope to do so in the course of a week. The following competitors have been entered as eligible, and we have decided to extend the time for receiving the first answers to Monday, January 25th:—

Student (Edinburgh)	Sagittarius (Clapham)
Jeuns (Belfast)	Stug (Blandford)
Brum (Birmingham)	F. W. Slaton (Peckham)
Norman (Horsham)	H. V. Letts (S. Norwood)
Cyanin (Glasgow)	Royal Mail (Rochdale)
D. S. Falconer (Edinburgh)	Falk (Glasgow)
The Dandy (Peckham)	G. A. Story (Canterbury)
Pen (Middleham)	Senor (Penketh)
Bas (Handsworth)	Chemicus (Lincoln)
Peg (Balham)	Stephani
Brom (Manchester)	Gas
H. R. Spencer (Balham)	Peg
J. H. Martin (Blackheath)	Fono
Lens (Finchley)	Artmar
Carbonate (Lyndhurst)	A. H. Payne
Poeg (Elgin)	W. Paterson
Tripod (Oldham)	H. E. Illingworth
Ttskroc (Nunhead)	H. L. S. Richardson
Bromide (Tooting)	Carfax (Horsham)
Tripodist (Newcastle)	F. Partridge (Launceston)
A. Geekie (Coupar Angus)	

QUESTIONS.

- 7.—Pyro and soda developer frequently gives a deep yellow stain: how would you remove this, and is it prejudicial in printing?
- 8.—Give formula for a mercurial intensifier containing cyanide of silver. State who first suggested it, and any possible dangers in using it.
- 9.—How would you choose a printing process?

Latest Day for Answers, February 1st.

RULES.

1. Answers must be received on the date stated each week in the *AMATEUR PHOTOGRAPHER*.

2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A *nom de plume* may be used, and must follow every answer, and be affixed to every specimen of practical work.

4. Answers are not limited in length, but preference will be given to concise answers without unnecessary amplification.

5. Those desirous of competing must apply to have their names entered. As these examinations are intended to encourage the study of the theory and practice of photography, authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

6. Past successful candidates will not be allowed to compete.

NOTE.—No information of any kind will be given to competitors, and nothing but the answers must be included for the examiners. All other communications must be addressed to the Editor.

Marks will be given for all answers, and, when possible, the best three answers will be published. The answer will not be published till the week following receipt of the same, and the examiners criticize each answer sent in, and when no satisfactory answer is received, will supply one. Three prizes will be awarded at the end of each quarter. (Full syllabus on application.)

All communications to be addressed to:—"EXAMINATION DEPARTMENT," *AMATEUR PHOTOGRAPHER*, 1, CREED LANE, LONDON, E.C.

Notes from the Edinburgh Centre.

I AM pleased to be able to write of the extreme pleasure with which the AMATEUR PHOTOGRAPHER 1891 Prize Slides were received by the members of both the Leith and Edinburgh societies last week. They were shown at Leith on Tuesday, and in Edinburgh on Wednesday. It would be difficult to over-estimate the value to photography of such travelling exhibitions. They undoubtedly stimulate to greater exertion those who are already entangled in the fascinations of the art, and they also form an incentive to those who have not yet tasted the pleasures of the most charming of all pastimes, to lose no time in setting to work. Photographers everywhere are deeply indebted to the Editor of the AMATEUR PHOTOGRAPHER for his enterprise in this direction, first in offering them the opportunity of competing for valuable honours, and then for allowing them to see the results of the competitions.

Apart from the exhibition of the slides, last week's meeting of the Edinburgh Photographic Society was an important one, inasmuch as at it Dr. Drinkwater, one of the Vice-Presidents, brought forward his motion, "That this Society considers it expedient to at once make an attempt to secure suitable premises for club-rooms, and authorises the Council to make preliminary inquiries, and appoint a Committee to complete the arrangements." Dr. Drinkwater submitted that there could be no better way for them to introduce new life into the Society than by turning themselves into a photographic club. They were, next summer, to have the Photographic Convention in the city, and they ought to be in a position to give their brethren a good opinion of Scottish hospitality. There were not wanting indications, especially among some of the older members, that Dr. Drinkwater's proposal did not meet with universal favour. On the other hand, some of the members enthusiastically supported him, and notably Mr. A. Ayton. The motion was carried, and the Council were instructed to report to next meeting the result of their inquiries. In the course of the discussion some forcible truths were expressed, as, for instance, that unless some change were made in the management of the Society, it would collapse through inanition, or a rival organisation would be started; and that though there were more than 300 members, a great many of them were not photographers at all. This is one of the weaknesses of the Society, that it is not a working society, and if it is to do good work that must be rectified. Probably the best way would be to create a club, to which those who admire but do not practice photography could be admitted, and to have a society in the club, to the membership of which only workers would be eligible. Of course, it is desirable to have as few non-workers as possible, and though admitting them to the Club, the charge for their admission might be augmented.

The Edinburgh University Photographic Society held their monthly meeting on Monday. Dr. J. R. Paterson occupied the greater part of the evening in discussing photographic apparatus and appliances. He ranged over the entire field, a truly Herculean task, but he came to it fully armed with specimens of nearly every appliance which is used in photography, and contributed a great deal of valuable information, not only regarding the most fitting appliances, but also the best way to use them. A novelty in the proceedings was that at the end of each item he stopped and remarks were called for, a method of carrying on the business which exactly suited the subject, as members were able to state their experiences while the subject was fresh in their minds. Mr. F. Dundas Todd exhibited the new flash lamp which he and Mr. Forrest have invented. He thought it fitting, he said, that as the society were the first to hear of the lamp, they should also be the first to see it. Mr. Todd showed it working, and assuredly it gives a light by which any photographer might work. The lamp is simplicity itself, and is so small that it can be easily carried in the coat pocket, a very valuable quality, as a cumbersome lamp is a nuisance. The members unanimously expressed the opinion that it was the best of all flash lamps, on account of its portable nature, its reliability, and, the best feature of all, that it consumes every particle of powder, and does not leave the atmosphere of the room thick with floating unconsumed particles.

It may interest some of your readers who are resident in this district to know that a set of the best works on photography have been added to the Edinburgh Public Library, and may be consulted in the reference department of the library. The selection of the books was placed by the librarian in the hands of Mr. F. Dundas Todd, who is an enthusiastic amateur photographer.

Societies' Meetings.

Ashton-under-Lyne.—On the 13th inst., Dr. A. Hamilton (President) presiding, an exceedingly interesting lecture was given before the members of this society by Mr. T. Widdop, of Oldham (Hon. Secretary Oldham Society), entitled "Tour through Northern Italy," illustrated by about 130 lantern slides, taken by himself whilst visiting that country. The slides throughout were of excellent quality. The audience were taken through the chief towns in Italy, including Venice, Florence, and Milan. Mr. Widdop's lecture accompanying his slides was both interesting and humorous.

Birmingham.—On the 14th inst. Mr. W. J. Harrison (in the chair) congratulated the society on its excellent prospects. The Secretary read an extract from the circular received from Mr. Andrew Pringle, asking for the favourable consideration of the members for the fund for Dr. R. L. Maddox. The claim of Dr. Maddox on dry-plate workers was gracefully urged by the President. An important demonstration and paper was then given by Mr. Geo. Bankart on "Carbon Printing;" the very workmanlike skill and results of Mr. Bankart were much appreciated by some thirty-six members, and a most cordial vote of thanks were given him. The President suggested a joint excursion in the summer months with the Leicester Society, and Mr. Bankart assured the members that the society would welcome the idea.

Blackheath.—The first meeting after the Christmas recess was held in the hall of the Art Club, Blackheath, on the 13th inst., Mr. J. T. Field (a Vice-President) in the chair. The prevailing epidemic prevented a full muster of members, but some excellent slides were shown by Messrs. D. R. S. Smith, Pope, Chaffey, S. B. Earle, Desforges, and Farrington, followed by useful criticism and discussion.

Camera Club.—On Thursday, the 14th inst., Mr. J. Howson read a paper entitled "The Pros and Cons of Chloride Printing." Capt. Abney occupied the chair. Mr. Howson argued in favour of the permanence, beauty, and simplicity of working of gelatin-chloride prints, and contended for the special applicability of each printing process to its particular purposes. The lecture was illustrated by a collection of examples, some matt and some highly glazed in surface; the prints also showing the variety of colour obtainable. After the discussion a vote of thanks was passed to Mr. Howson.

Cornish.—On the 12th inst. Mr. H. M. Smith, of the Eastman Company, gave an explanation of the Kodak camera, and afterwards threw upon the screen a number of views taken with the camera. There was a fair attendance.

Darlington.—The usual meeting of this society was held in the Imperial Hotel, on Monday, January 11th. The President, Mr. Howlett, presided over a good attendance. Mr. Hollis read a most interesting and instructive paper on "Lenses and General Outfit." There were a great many cameras, hand-cameras, lenses, etc., shown by members, which attracted much notice.

Derby.—The monthly meeting was held on January 12th. Mr. G. Bankart, of Leicester, gave a practical demonstration of "Carbon Printing." The process was watched throughout with great interest by the members. The Secretary read the balance-sheet and annual report for 1891, which showed the Society to be in a flourishing condition, and with a good balance at banker's. Six new members were elected.

Dewsbury.—The annual meeting was held on the 14th inst., Mr. A. S. Marriott, President, in the chair. The Secretary, Mr. Geo. Kilburn, read the annual report. Fourteen meetings have been held during the year. The following gentlemen have contributed papers and demonstrations:—Mr. A. S. Marriott, on his "Voyage to South Africa and back," illustrated; the Secretary, on "Stereoscopic Photography;" Mr. J. Taylor, "Platinotype Printing;" Mr. C. Naylor, "Kallitype Printing;" Mr. S. Mitchell, "Bromide Enlarging;" Mr. S. D. McKellen, Manchester, "Stereoscopic Apparatus;" Mr. H. M. Smith, London, on "Kodak Hand-Cameras." *Photography* 1890 and 1891 Prize Slides have been shown. The meetings have been fairly attended, and the membership shows an increase over last year. The following officers were next elected:—President, Mr. A. S. Marriott, re-elected; Vice-President, Mr. S. Mitchell; Committee, Messrs. J. Taylor, C. Naylor, and E. Scargill; Secretary and Treasurer, George Kilburn, re-elected. Mr. J. Taylor showed a stereoscopic camera and stand, of his own construction, and which gave great credit to him. Samples of bromide paper sent by the Eastman Photographic Materials Company were handed round to members, the results obtained by members on them to be brought to the next meeting.

Edinburgh.—The third ordinary meeting of the session of the Edinburgh Photographic Society was held on the 13th inst. at the Professional Hall, George Street, Mr. J. M. Turnbull presiding. The AMATEUR PHOTOGRAPHER Prize Slides of 1891 were shown by lime-light on a screen before the commencement of the business. A vote of thanks was accorded to the Editor of the AMATEUR PHOTOGRAPHER for the exhibition, and to Mr. Oliphant for his explanations of the slides. Dr. Drinkwater proposed that it was expedient to at once make an attempt to secure suitable premises for Club-

rooms, and to authorise the Council to make preliminary inquiries and to report to the next meeting. He urged that the Society was suffering from a want of life, which his proposal would remedy. He pointed out, moreover, that the Photographic Convention would visit Edinburgh in the summer, and they wanted to give a good opinion of Scottish hospitality, and show that the Edinburgh Photographic Society was a power in the Scottish photographic world. They could not do so at present without a club-room, dark-room, or proper conveniences. Mr. Ayton seconded the motion, which was agreed to after some general discussion.

Fairfield.—The first ordinary meeting of the Club was held on the 12th inst., the President (Mr. J. L. Mackrell) in the chair. Several members brought prints and slides, and a very enjoyable conversational evening was spent. It was arranged that a competition open to members should take place on the 8th of November, 1892, and a prize was offered for the best set of six prints and one for a set of six lantern slides, subjects to be taken during 1892. Messrs. Harry Holt and H. Storey were elected members.

Great Yarmouth.—The members met at the house of the Hon. Secretary on the 12th inst., to transact general business, etc. The *Photography* American slides were passed through the lantern by the Secretary, assisted by Mr. Price, and on the whole gave satisfaction. At the conclusion, 150 slides from photographs taken in India by Colonel Wood, C.B., were passed through the lantern. They were most excellent, and proved very interesting. Mr. Price also showed some first-rate slides kindly lent him by an old friend. The Secretary stated that he had not yet fixed the date for his paper on "Hand Cameras," but he hoped to be able to fix for the latter end of February. He had been promised the loan of hand-cameras from many of the best makers, and he had no doubt that on the evening he would be in a position to exhibit a large variety.

Guildford.—On the 12th January the usual monthly meeting was held, when the *Photography* prize slides for 1891 were exhibited. There was a good attendance of members and friends, and hearty applause was frequent. Mr. T. W. Powell occupied the chair, and Mr. A. E. Moon took charge of the lantern.

Haltwhistle.—On the 9th inst. a meeting took place, Mr. George Clerk presiding. After the usual business the AMATEUR PHOTOGRAPHER Prize Slides for 1891 were exhibited by the Secretary. They gave general satisfaction. The attendance, owing to the weather, was moderate.

Holborn.—Usual weekly meeting on the 15th inst., Mr. A. J. Golding in the chair. Mr. John Howson gave an interesting lecture on "Isochromatic Photography," in which he traced the history of isochromatic photography from Professor Crooke's discovery to the present time. Isochromatic photography had many opponents as well as friends, and Mr. Howson, in common with many others, had had a certain scepticism of the advantages of isochromatic methods, until, in an idle moment, he undertook to test the thing for himself. His first experiment convinced him of his error. Mr. Howson then explained the use of the yellow screen, going into the question of the depth of the colour screen very fully. He treated on the many advantages of isochromatic plates in a masterly manner, and gave several experiments during the evening illustrating his remarks.

Huddersfield.—The ordinary meeting was held on the 14th January, Mr. W. H. Charlesworth in the chair. The American slides, kindly lent by the Editor of *Photography*, were exhibited to members and friends, who spent a very enjoyable evening, at the close of which the Secretary distributed samples of bromide paper, etc., which had been forwarded by the Eastman Photographic Materials Company, Ltd.

Leicester.—A meeting was held on the 13th inst., the Vice-President, Mr. Pierpoint, in the chair. The minutes of the last meeting were read and confirmed. Messrs. F. B. Wilmer, Sydney Baker, Hare, and Bailey were elected as members. The Treasurer presented his report, showing a balance to the good. The accounts were received. Mr. Pierpoint was elected President for the ensuing year. Mr. Porritt was elected Vice-President. Samples of the Eastman new rapid paper were distributed, after which the American slides, "The Yosemite Valley," were passed through the lantern.

Lewisham. January 15th, Mr. H. Davis in the chair. After having everything ready for the enlarging demonstration, Mr. Dresser sent to say that he had been taken suddenly with influenza in the train, so had to return home. He sent on numerous very fine enlargements from hand-camera negatives, together with the paper and developing solution he had intended using, but, as they were almost entirely devoid of particulars (excepting that the paper was Frv's "Argentotype," and the solution eikonogen), it was a very difficult matter for Mr. Stodart (who kindly undertook to fill his place) to know exactly how to use them; but, after experimenting upon a strip of paper, something like the right amount of exposure and proportion of developer was hit upon. An enlargement was then made by the aid of the lantern, and a very passable picture resulted, taking all the great difficulties into consideration. A discussion followed upon the different methods of enlarging, the

Chairman explaining the way he had lately adopted, with the best results, which had been shown him by a member of the Richmond Camera Club. It is so simple and effective that it cannot be too well known; any ordinary enlarging camera can be used. At about an inch from the back of the negative a piece of ground-glass is placed, and another piece about an inch from that, with the ground side towards the negative, and about 3 in. behind that a wire frame about 1½ in. larger each way than the negative, from which are suspended strips of magnesium ribbon (about 6 in. long for quarter-plate), ¾ in. apart; they are lighted one after another, it does not matter in what order, there being no perceptible difference whatever in the result. It is advisable to look through smoked glass when lighting them, and always to wipe the smoke off the glass after each exposure. In consequence of a large number of the members being laid up with the influenza, it has been decided to postpone the print competition till the end of February.

Liverpool Camera Club.—The usual meeting was held on the 13th inst., in the College, Shaw Street, the President (Dr. Webb) in the chair. The chief item was a lantern exhibition—"Views of Windsor," by Mr. W. Grimshaw, who has got together a splendid set of views, some of Burnham Beeches being perfect studies.

Liverpool Y.M.C.A.—The annual social evening of the club was held on the 13th inst., when about seventy members and friends were present. An elocutionary and musical *mélange* was given by the Secretary, Mr. J. C. Lee, assisted by Miss A. Campbell Walker as pianist, the various items being frequently applauded. After refreshments had been served, a competition for the best set of twelve slides by members, was held, Mr. Tomkinson (of the Liverpool Amateur Photographic Society) kindly acting as judge. The prize of one guinea was awarded to "Ich Dien" (Mr. Ellis), whilst "Paul" (Mr. C. Young) and "Rambler" (Mr. H. Hannah) were highly commended, the slides showing a good improvement on last year's work. A set of prize slides, kindly lent by the Liverpool Amateur Photographic Society, were then passed through the lantern and described by Mr. Tomkinson.

Manchester.—The last meeting of the session was held on January 12th, Mr. Davenport (President) in the chair. Twelve new members were elected. Mr. Parrott gave an interesting demonstration on "The Manipulation of the Limelight Lantern," and in a very lucid manner described the gas cylinders, valves, jets, optical arrangements, etc. He then projected upon the screen about 200 slides contributed by the members, some of which were technically criticised as they appeared.

Newcastle-on-Tyne.—On the 11th inst. the members and friends of the above association numbering over 600 met in the Literary and Philosophical Society's Lecture Hall, Newcastle (the President, Mr. A. S. Stevenson, J.P., in the chair), the occasion being the exhibition of the AMATEUR PHOTOGRAPHER 1891 Prize Slides. On the whole the slides gave great satisfaction, with the exception of the architectural class, the bulk of which was felt to be only feeble. Mr. H. G. Ridgway, Vice-President, manipulated the lantern, and at the conclusion showed a series of his own slides.

North Kent.—The annual meeting was held on 14th inst., Mr. I. C. Johnson, J.P., President, in the chair. The balance-sheet was read and adopted. The society is in a good financial position, the balance in hand being greater than on any previous occasion. The society has been affiliated with the Photographic Society of Great Britain. The officers for 1892 were elected as follows:—President, Mr. I. C. Johnson, J.P.; Council, Messrs. J. K. Barlow, P. J. Boorman, J. Caddel, jun., J. S. Dismore, F. Hamerton, S. Hodson, S. R. Macartney, T. Nettleingham, J. Pilkington, C. A. Rotherham, and H. Sandford; Secretary, G. W. Cobham, 3, Edwin Street, Gravesend. The President was appointed delegate to the Photographic Society of Great Britain. Mr. J. H. Morris was elected a member of the society. After the business was concluded, the President introduced the subject of "Toning," and exhibited some photographs that he had bought in London twenty years ago, which had so faded as to be almost obliterated. At the same time he showed some whole-plate copies of prints which he had made about the same time, which were very bright and showed no signs of fading. He attributed the difference in quality to the different method of toning. His own were printed on self-sensitized paper, and toned with home-made chloride of gold. For the entertainment of the meeting, he showed the method of producing chloride of gold sufficiently pure for toning purposes, which was afterwards proved by toning two cartes printed on the new Ilford paper. An old gold ring was immersed in a mixture of hydrochloric and nitric acids, and dissolved by the aid of a gentle heat. The acids were then neutralised with carbonate of soda, diluted with distilled water, and filtered. The experiment was very simple, but evidently produced an efficient toning solution when added to the sulpho-cyanide solution as recommended by the Ilford Company.

North London.—A meeting was held on the 19th inst., Mr. E. R. Groundwater in the chair. The Journal of the Photographic Society of Great Britain was laid upon the table. A number of

packets of bromide paper sent by the Eastman Company for distribution were issued to the members for experiment. Mr. Edgar Clifton then spoke on "The Dark-Room," referring to his own experiences with various dark-rooms, from the traditional cupboard under the stairs, to a distinct room in the house, the various fittings in which were fully described. The window was covered by a frame on which American cloth was strained, and working on a hinge so that white light might be admitted at any time. The other arrangements were as usual, except that the waste had to be received by a pail, the risk of overflow being met by limiting the water supply accordingly. The need of ventilation was strongly insisted on, and various modes were suggested, the one preferred being by means of the lamp from which light is obtained. Sinks were discussed, and lead-lined ones strongly recommended—failing which an ordinary washing tray would be a good substitute, as mentioned by Mr. Cowan. An ingenious plate-washer consisting of a series of perforated trays was described. A great advantage in washing plates was to tie a piece of thick felt over the nozzle of the supply tap, as thereby much grit was prevented from reaching the films. A mode of improvising a dark-room when travelling was next suggested. Carrying a sheet of waterproof cloth among one's luggage, with a portable lamp, a jug, and two pails, which could always be obtained in one's temporary abode, any plates might be developed in comfort at an ordinary table in the evening. Permanent dark-rooms should be coloured orange chrome, the light reflected from the walls and ceiling being thus made safe in case of any risk of light leaking. A word of advice followed—to keep the hypo dish where it can be conveniently found, but out of the way of everything else, under the sink on a shelf being a good place. For dishes Mr. Clifton preferred ebonite, and would also use an automatic rocker when possible. The draining rack being touched upon, a sketch was given of a useful form. Out-door dark-rooms were described with illustrations (the black board being freely used), showing modes of construction, arrangement, and ventilation, and also provision for daylight enlarging. On the question of lighting, one thickness of yellow glass and two thicknesses of yellow fabric were spoken of as giving a safe light under most conditions, artificial light being best, as being of constant power as compared with the variations of daylight. For isochromatic plates a piece of red fabric should be added, and in all cases the light, if possible, should be screened from the eyes. Some conversation ensued upon the points raised by the lecture.

North Middlesex.—The annual general meeting was held on the 11th inst., the President (Mr. J. W. Marchant) in the chair. Five new members were elected. The balance sheet showed the funds of the Society to be in a satisfactory condition, notwithstanding the heavy demands made upon them to carry out the numerous improvements projected during the year. The President then read his report of the year's work, showing a large increase in the membership and increased activity in all branches of work by the members, giving thanks to Messrs. Gale and Robinson, the judges at the exhibition, and to those gentlemen, non-members and members, who had assisted the Society with lectures and demonstrations during the year. The report was unanimously adopted. Several alterations in the rules were made, and the following officers and council were elected:—President, J. W. Marchant; Vice-Presidents, H. Walker and F. L. Pither; Treasurer, F. W. Cox; Council, F. Cherry, C. C. Gill, J. C. S. Mummery, H. Smith, T. C. Lathbridge, C. Beadle, J. L. Treadway, J. Steuart, J. Saville, S. E. Wall, W. Taylor, and C. O. Gregory; Hon. Sec., J. McIntosh, 14, Lowman Road, Holloway; Assistant Hon. Sec., F. M. Ainsley. Tickets for the P. S. G. B. lectures were distributed among the members, and it was resolved that the Society should as a body support the testimonial to Dr. R. L. Maddox.

Oxford.—On January 5th, the President in the chair, Mr. C. C. Cole read a short paper on "The Exposure and Development of Plates." Attention was called to many important points, particularly the care required in arranging a picture. An interesting discussion followed. It was announced that the society had been affiliated to the Photographic Society of Great Britain; but a delegate has not yet been appointed to attend the meeting arranged for the end of this month. Mr. C. A. Jenkins, F.R.S. (University Observatory), Mr. H. Hindley (Christ Church), and Mr. J. A. Drayton were elected members.

Putney.—The series of lectures on "Photography" in connection with this society was ably opened on the 13th inst. by Mr. W. Welford, late Sub-Editor of *Photography*, by a paper on "The Camera and its Parts." The chair was occupied by Dr. W. J. Sheppard, who after the usual formal business introduced the lecturer. Whilst reminding his audience of the natural difficulty of the subject, Mr. Welford, having explained the general principles of photography, carefully traced the camera from its early simplicity to its present high-class perfection, pointing out the uses, and in many cases the abuses, of its various parts, and the recent improvements, notably in the matter of dark slides, and the reduction in weight of every part by the use of careful workmanship, light woods,

and aluminium. As a general rule, he could not recommend the use of the delicate instruments now so much to the fore: his inclination being towards the medium priced but stronger and plainer apparatus. As an illustration to his remarks, a fine instrument by Watson and Sons was on view. Mr. Samuel, representing Mr. Hudson, was in attendance, and by means of his new Kolm magnesium lamps, a successful group of the meeting was obtained.

Southsea.—The fourth annual general meeting of this society was held on the 13th inst., the Vice-President (Commander Cobb, R.N.) in the chair. The financial statement for the past year, which showed the society to be in a satisfactory condition, was placed before the members, after which the election of officers for the current year was proceeded with. Commander Cobb, R.N., was elected President, and Mr. J. J. Thornton, Vice-President and Treasurer. Council, Dr. Lord, Messrs. Grant, Leventhorpe, and Fisher. Major Bruno was elected Hon. Secretary, vice Dr. Lord, whose resignation was received with great regret. A vote of thanks was unanimously passed to Dr. Lord for his services since the formation of the society, in which he has always evinced the greatest interest, and the society hopes to benefit by his advice and experience, in his capacity as a member of the Council, although compelled to resign the duties of Hon. Secretary. Several new members have recently been enrolled, and a successful season is anticipated.

Sutton.—An exhibition of the 1891 lantern slides, lent by *Photography* was given on the 3rd inst. Many of the slides were very beautiful, the seascapes and flower studies eliciting universal applause. The American slides will be shown on February 5th.

Ulster.—The sixth annual meeting was held on the 11th inst., Mr. Alex. Tate, C.E., President, in the chair. The annual report and statement of accounts showed the society to be in a flourishing condition. It has a membership of eighty-seven, a balance in hand of £7, possesses a fine lime-light lantern, and has just purchased a very complete enlarging apparatus, which is loaned to members free of charge. The following were elected office-bearers for 1892:—President, Mr. Alex. Tate, C.E.; Vice-Presidents, Mr. Wm. Swanson, F.G.S., and Mr. John Brown; Committee, Messrs. J. J. Andrew, E. Braddell, S. B. Coates, M.D., R. J. Evans, Wm. Gray, M.R.I.A., James Leslie, J. McCleery, and Jas. Stelfox; Hon. Treasurer, Mr. Robert E. Workman, 19, Bedford Street; Hon. Secretary, Dr. Cecil Shaw, 14, College Square, Belfast. The business having been concluded, a lantern-slide competition was held, and two medals were awarded, by the votes of the members present, the first to Mr. T. F. Bell, the second to Dr. Cecil Shaw.

SOCIETIES' FIXTURES.

- Jan. 22.—PUTNEY.—"Home-Sensitized Paper," by Mr. Ardaseer.
 " 25.—CAMERA CLUB.—Elementary Lecture, by V. A. Corbould.
 " 25.—LANTERN SOCIETY.—"Pressure Gauges," by C. F. Budenberg.
 " 26.—P.S.G.B.—Lantern Slide Making, discussion on.
 " 26.—CLEVELAND.—"Flashlight," and general meeting.
 " 26.—CORNISH CAMERA CLUB.—"Enlargements," by H. Tonkin.
 " 27.—BLACKHEATH.—"Lantern Slide Development."
 " 28.—CAMERA CLUB.—"Lantern Evening," slides by Lt.-Col. Gale.
 " 29.—PUTNEY.—"Manipulation of the Optical Lantern," by the President.
 " 30.—PUTNEY.—"Hand Cameras," by A. R. Dresser.

Developing Formulae for Paget Prize Plates.—*Pyro-ammonia*, No. 1: Pyrogallie acid, 1 oz.; citric acid, 60 gr.; sodium sulphite (pure), 2½ oz.; distilled water, to make 20 oz. No. 2: Liq. ammonia, .880, 1 oz.; ammonium bromide, 80 gr. (for Phoenix plates, 120 gr.); distilled water, to make 20 oz. One part of each to 10 parts of water. *Pyro-soda*, No. 1: Pyrogallie acid, ¼ oz.; sulphuric acid, 5 drops; distilled water, to make 20 oz. No. 2: Carbonate of soda (cryst. pure), 2 oz.; sulphite of soda (pure), 2 oz.; distilled water, to make 20 oz. Equal parts of each. *Hydroquinone*, No. 1: Hydroquinone, 1 oz.; methylated spirit, 10 oz.; sulphurous acid, ¼ oz.; potassium bromide, ¼ oz. Dissolve the hydroquinone in the spirit, and add the acid. In another vessel dissolve the potassium bromide in 3 oz. of distilled water. Mix the two solutions, and make up to 20 oz. with distilled water. No. 2: Caustic soda (in sticks), 1 oz.; sodium sulphite, 5 oz.; distilled water, to make 20 oz. One part of each to four parts of water. If this be found to give too hard a negative, use more water. *Eikonogen*, No. 1: Eikonogen, ½ oz.; sodium sulphite, 1½ oz.; potassium bromide, 8 gr.; distilled water, to make 30 oz. Sixty grains hydroquinone added to above is a decided improvement, increasing brilliancy and density. No. 2: Potassium carbonate, 1 oz.; distilled water, to make 10 oz. Three parts of No. 1 to one part of No. 2.

Discovery of Planets by Means of Photography.—Dr. Wolf, of Heidelberg, has discovered two minor planets by means of photographic plates taken on the 22nd and 23rd of December. One of these is new (No. 323), but the other is probably identical with Sapia (No. 275), which has only once been observed, in opposition. Since Dr. Wolf's discovery the two planets have been watched by Dr. Palisa at Vienna. The art of stellar photography has made rapid strides of late years, and has now become a powerful instrument in astronomical research. It has been expected that new planets would be discovered by this means, since, if two photographs of the same region of the heavens be taken at different times, upon comparison, a planetary body will betray itself by its movement with regard to the fixed stars in the interval, or, if a single plate be exposed long enough, the planet will, by its movement, trace a "trail" upon the plate, whereas the images of the stars will be dots, the telescope being driven by clockwork so as to keep them always in its field as they apparently revolve around the earth in consequence of the diurnal motion. The mean places for 1891 of the two planets found by Dr. Wolf are (1) 6h. 38m. 42.28s. + 24° 47' 0.3", and (2) 6h. 49m. 30.64s. + 18° 37' 5.33".—*Ex.*

A Simplified Method of Preparing Sulphurised Asphalt.—Herr Valenta, in the current number of the *Photographische Correspondenz*, gives the following simplified method of preparing light-sensitive sulphurised asphalt or bitumen:—100 grammes of raw Syrian asphalt are to be boiled with an equal quantity of commercial pseudocymene in which 12 grammes of sulphur flowers have been dissolved. When after about three or four hours, the formation of sulphuretted hydrogen has ceased, the cymene is distilled off, and the product is the light-sensitive asphalt from which the film is prepared in the usual way

by solution in benzol. The new preparation is soluble in benzol, toluol, cymene, xylol, and turpentine; it is said to be even more sensitive than that prepared by Valenta's other method.

Lightning, studied from the point of view offered by photographic inquiry, was dealt with this week in a lecture given by Dr. Hermann H. Offert at South Kensington Museum. In his introductory remarks the lecturer described the general aspect of sparks produced by an electrical machine, from which analogies were drawn of the larger discharges given off in nature. This was illustrated on the screen by photographic pictures of sparks, passing from the positive to the negative poles, and also of sinuous, ramified, meandering, and other forms of lightning, the similarity in each instance being clearly demonstrated. The character of multiple flash lightning, and what have been termed curtain and ribbon flashes, was also explained at some length. Experiments were next shown illustrating the effects of discharges of electricity through fine wires made from various metals, the wire being completely fused and incorporated into the fabric of the paper on which it rested. In fact, so complete was the fusion that the only indication left behind was a dark line bordered on either side by delicate raised markings of light and dark grey. Another interesting experiment was the change in the colour of clouds when charged with electricity. This was shown by bringing the poles of a battery into contact with a jet of steam projected on to the screen, when it immediately changed from almost imperceptible white vapour to a dark purplish black column, which resumed its normal appearance immediately the electric current was cut off. The lecture was concluded by a series of pictures depicting the peculiar and destructive action of lightning upon trees and people.

To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

QUERIES.

5377. **Lantern Light's Candle-power of.**—What is the respective candle-power of the light obtained from the following lamps: Oil lamp with four wicks, oxyacetylene lamp, blow-through jet, mixed jet, and ether oxygen lamp?—*JOS. PH. C. KING.*

5378. **Making Hand Camera.**—Could any of your numerous readers inform me of the best way of converting a quarter-plate Instantanograph into a hand-camera to carry on a bicycle? Would ordinary landscape lens suit?—*NELLA NHOJ.*

5379. **Zylonite Films.**—Could any one give me particulars of England's or Fitch's Zylonite films? Are they as satisfactory as glass plates in developing, as I require something lighter than glass and more portable?—*NELLA NHOJ.*

5380. **Making Lantern Slides.**—Can any reader tell me whether lantern slides may be made from silver prints at night with flash lamps; and if so, how and at what distance from the 12 by 10 prints the lamps should be arranged?—*STUDENT.*

5381. **Lens for Condenser.**—I have an old combination lens which is not much use, as it is too heavy and clumsy to carry about. Will any part of the combination do for a condenser for a small magic-lantern?—*OPRIC.*

5382. **Enlarging.**—Will any one of your readers kindly tell me if I can enlarge half-plate photographs with half plate R.R. lens and Lancaster's Instantanograph camera in an ordinary room by daylight without the additional expense of a lantern, with good effect, with full detail of working?—*ANXIOUS.*

5383. **Spots on Bromide Paper.**—I should be glad to know why bromide prints when dry have spots on them like rain drops. Until they are dry the surface appears quite clean and glossy.—*DEVONIA.*

5384. **Tylar's Window Shutter.**—Can any reader

of the AMATEUR PHOTOGRAPHER inform me what is the quickest time Tylar's "window shutter" can be worked?—*WOODGATE.*

5385. **Clip for Dark Slide.**—Which is the best form of clip? My slides have the common little wire hooks which make even professional photographers use bad language. In the "Year Book of Photography," 1892, Mr. Cecil Hepworth describes a clip, but omits to say where it may be obtained. I have not time to make my own appliances, and would ask those who favour me with a reply to state also where the clips can be obtained and affixed to the slides.—*MOZO.*

5386. **White Ink for Marking Lantern-slides.**—I shall be glad if any of your readers can tell me how to make this ink.—*W. EDISON.*

5387. **Instantaneous Shutter.**—Will any reader give their experience with Lancaster's Chronolux shutter? Is it suitable for outdoor work, or would a Thornton-Pickard be more useful?—*SHAW.*

5388. **Lantern.**—Which is the best form of lantern with condenser to purchase for exhibiting (generally) in a school where gas cannot be obtained?—*SHAW.*

5389. **Blackening Lens Stops.**—Will any reader oblige by saying how I can blacken my lens stops, as mine have worn bright?—*J. B. K.*

5390. **Waxing Paper Negative.**—Will any reader kindly describe the method of waxing a paper negative?—*SHAW.*

5391. **Lantern-slide.**—Can a print be made from a lantern-slide by making a negative from it first?—*N. E. N.*

5392. **Lantern Camera.**—Would any reader explain how a connection can be made to use with a Lancaster half-plate camera and R.R. lens, to make by reduction lantern-slides from whole and half plates, and how to contrive to take off cap for exposure, and best size of stop to use, and about ordinary exposure for daylight and gaslight?—*NEVILLE.*

5393. **Hand-camera.**—Will someone kindly tell me which is the best hand-camera I can get for less than two pounds, and what plates are recommended for hand-camera work?—*ROVER.*

5394. **Lantern Making.**—Having a half-plate portrait lens not in use, can I use it in making a lantern, and is it really necessary to have condensers? I should be much obliged if some brother amateur would favour me with a few particulars how to proceed. Size of lens, 24 in. across and 4 in. from front to back.—*LANTERNIST.*

5395. **Gold Lines.**—Will someone kindly inform me how I can make a fine gold or bronze line on glass, to form a mount round the borders of crystoleum? I find a brush and pen entirely useless.—*J. H.*

5396. **Cartes de Visite.**—Can you tell me when the ordinary carte de visite photographs were first introduced (silver prints) (vignettes)?—*P. G. STOREY.*

5397. **Hydroquinone Formula.**—Will someone kindly tell me a good hydroquinone formula and the whole process by which to get grey prints with the Ilford Alpha and bromide papers? Can several prints at a time be placed in the hydroquinone as in a gold toning bath? Can it be used more than once, and what colour should they look when removed from the hydroquinone?—*E. M. W.*

QUERIES UNANSWERED.

Jan. 1—No. 5337.

„ 8.—Nos. 5348, 5350, 5352, 5354, 5357, 5360, 5364, 5366.

„ 15.—Nos. 5270.

ANSWERS.

5349. **Borax Formula.** In my remarks at a recent meeting of the South London Photographic Society, I fully described my method of toning and fixing silver prints. This of necessity had to be much curtailed in the report. I will now endeavour to "fill up the gap" to "Robin's" satisfaction. In making up a toning bath, I take half a teaspoonful of powdered borax and pour over it half a pint of boiling water and to half a pint of cold water I add the gold. The two solutions mixed together form a bath of about the right temperature; the quantity of gold entirely depends upon the class of prints I intend to tone. It always seems to me utter nonsense to say $\frac{1}{2}$ gr., 1 gr., or 2 gr. to a sheet of paper; for instance, if the prints are all vignettes, $\frac{3}{4}$ gr. to the sheet will be quite sufficient, but if printed out full with deep shadows, 2 gr. will not be found too much. The fixing bath is made as follows: 2 oz. of hypo dissolved in half pint of cold water and a teaspoonful of powdered borax dissolved in half pint of boiling water; the two mixed together form the bath, which will not blister any paper. Fixing is completed in ten minutes or a quarter of an hour, provided always prints are turned over and kept in motion the whole time.—*H. R. HERBERT.*

5361. **Burnisher.**—The Knox burnisher is, in my opinion, thoroughly practical and efficient, one likely to suit an amateur. Simple in construction, easy in management.—*CYANIN.*

5367. **Microscopy.**—"R. L. H." had better consult "Beginner's Guide to Photography," published by Perken, Son, and Rayment, price 6d., which gives all that is required by "R. L. H." to produce minute photographs.—*CYANIN.*

5368. **Backing for Plates.**—I don't think you will have any difficulty with the glycerine drying too quickly. The job is to get it to dry at all.—*PEN.*

5368. **Backing for Plates.**—"G. C. H. W." can obtain paper ready prepared for backing plates from Percy Lund and Co., Bradford.—*H. W. B. B.*

5369. **View Meter.**—Try Lancaster and Sons, Colmore Row, Birmingham, for lenses required.—*H. W. B. B.*

5371. **Enlarging Apparatus.**—Either will give good results, but you will have less trouble if you get a "combination." It is always ready, without having to use your own lens, etc.—*PEN.*

5372. **Thin Negatives.** Thin negatives can certainly be intensified after fixation, and formulae for this are given in most works on photography. I should, however, recommend "Nev. B." to give Werner's intensifier, to be got at photographic dealers, a trial. The advantages of this intensifier are that it is applied after the negative is dry and the intensification can be stopped at any point. Half-crown bottles used to be sold, but I have only seen the 5s. half-pint bottles of late; the bottles last a long time.—*J. G. P. VEREKER.*

5372. **Thin Negatives.**—Yes, if you take care to wash the thin negatives well in water for an hour, so as to remove the hypo. A good formula for intensification is:

No. 1.	
Bichloride of mercury	1 oz.
Water	20 "
No. 2.	
Solution of ammonia (s.g. '890) ..	1 drm.
Water	5 oz.

I have used this formula for years, and if you follow

the following instructions you cannot go wrong. Immerse the negative in No. 1 till it is perfectly white, then wash well for half an hour, then immerse in No. 2 till the negative is evenly darkened to your satisfaction, and finally wash well. You must be careful in working with bichloride of mercury, because it is deadly poison.—E. A. HUMBLE.

5373. **Burnisher.**—I use a "Knox Burnisher" of 8 in., with singular success. The following is from their directions: "If by accident the hard should become scratched, rub it steadily from end to end (not across) with a fine oil stone, using sperm or sweet oil. If the roll becomes smooth by wear and does not feed, draw file from end to end with a fine-cut file."—CYANIN.

5374. **Density of Negatives.**—The reason you get thin negatives is because you use too little pyro and develop too quickly. It has nothing to do with the lens. For developing ordinary negatives I recommend you to use the following quantities of your 10 per cent. solutions:

Pyro.	..	..	20 to 30 minims
Ammonia	..	..	10 "
Bromide	..	..	8 "

per ounce of developer. Develop until you can hardly see anything left but blackness, when looking at the plate in the dish. Do not force development, and do not add any more ammonia until the image is well visible (unless the plate appears very under-exposed), and then only a very little at a time. If you follow these instructions your negatives ought not to be thin, but if they require intensifying see answer to No. 5372.—PEN.

5376. **Lanterns.**—Either of the lanterns named will give good results so far as exhibiting slides goes. But "Joan" must not expect to enlarge a quarter-plate negative satisfactorily with 4 in. condensers, which these lanterns have. A 6 in. condenser is required to enlarge a quarter-plate direct, but "Joan" can reduce the quarter-plate negative to about 3 in. by 2 in., and thus obtain an enlargement of the whole subject.—H. W. B. B.

EDITORIAL.

SPECIAL NOTICE.—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

S. A. WARBURTON.—We thought it better to send you on the letter of complaint, as, being on the spot, you would be able to do more than we could. We have noted the change of address.

C. H. W.—Your picture would be eligible. A. W. GOTTIEB.—The criticisms on all the pictures will be included in a special number. See "Our Views" this week.

REV. CHAS. GAZE.—All prints sent in for "No. 30, Inland Scenery Competition," were criticised in the December number of the *Reporter*, which, though rather late, has been in print some time.

DR. RINGROSE ATKINS.—It may possibly be of "malice aforethought" that you made your prints vary in colour. We can only say that the judges did not like it, and remarked on it. The medal is in hand, and will, we hope, reach us soon, when it shall be sent on.

W. ERRINGTON COWAN.—Small or large size has nothing to do with the winning of the prizes. The gold medal pictures were hand-camera shots, but gems, both technically and artistically. Your prints will be retained one month and then returned.

A. HANDFORD.—We fail to see how the reflections from a mirror could affect the detail in sitter's coat. A longer exposure and longer development would have improved matters; better results could even now be obtained by intensifying the negative.

ROBIN.—We are quite willing to take your word for the genuineness of the snow. The print is good, but you could have made a great deal more out of it by making the boys stand on the edge of the pavement, one with a penny whistle and the other two singing.

J. HARRIMAN.—Many thanks for your stereo print, which certainly emulates thistles. We do not now give a weekly illustration, as our Monthly Supplement is illustrated.

P. B.—We will keep your letter before us, but we cannot at present send you a negative.

G. C. H. W.—If you unscrew one of the combinations and use the other, you include half your subject, the focus is doubled, and the exposure quadrupled. We should, however, suggest your obtaining a special long focus landscape lens. F/32 always requires the same exposure, whether in doublets or landscape lenses. We believe the plates are still packed in grooved boxes. The extra-rapid plates require the same treatment as the ordinary. You will find that Mr. Wall's articles on "Photographic Procedure" will help you this week.

J. HULBROCK.—All the "Holidays with the Camera" pictures will be criticised in a special number. We retain all prints for one month, and we shall be able then to let you know where yours came in.

B. W. GILBERT.—Flatness is generally the result of over-exposure, but it may also arise from the printing process. We should strongly advise you to keep on; quiet and steady perseverance will meet with its reward finally.

G. MURRAY WILSON.—We quite agree with you that the index of the volume should be ready by the second week, and so was ours, but as we had an illustrated supplement, which meant four extra pages gratis, we could not see our way to give the index in as well, but put it in this week instead.

MISS B. NISBET.—(1) There are far too many straight lines in this; at least two inches might be spared from the foreground. (2) This strikes us as being developed with hydroquinone, and the print is wanting in brilliancy and vigour, was not well washed prior to toning, and the right side of the picture is decidedly weak and wants breaking up. (3) Under-exposed or under-developed, the camera was not upright, and the priory is consequently inclined to fall down. (4) This shows signs of unequal covering by the developer, and has not been developed sufficiently. Pay rather more attention to your foregrounds, and let us know what developer you are using. Let us see some more work in a month.

W. P.—(1) Cut an inch off foreground. Never use prussiate paper for prints for criticism. (2) Shows careful technical work. (3) Cut 3 in. off foreground, and it is far too light in tone; not printed half deep enough. (4) Cut 1 in. off foreground, print slowly on gelatin-chloride paper. (5) Dreadful, too patchy, flat, and too black. (6) Spoilt by the halation at the top. Can you not dodge this in printing so as to get more out of it? Too much foreground again. (7) This is the same as 3, but is by no means improved by the yellowing of paper; it also wants deeper printing.

A. MARSDEN.—We are unable to find your prints anywhere.

T. HALL.—(1) Negative all right. (2) Slightly under-exposed, face too dense, the film shows iridescent fog. (3, 4, 5) These are all right and ought to give good prints with nearly every process. (6) Very poor, much under-exposed and under-developed. (7) A little longer exposure would have improved this. (8) All right. (9) Development might have been carried a little further, and rather more alkali need so as to fetch out more in the foreground.

W. TRELAUNY ADAMS (South Africa).—(1) Good, but a little too panoramic in character to make a picture. (2) This print is too hard; there is no detail in the flowers at all. (3) Insufficiently printed and too panoramic. (4) Insufficiently printed. The water has no detail in it, otherwise would make a pretty picture. (5) See note to No. 1. (6) See note to 2. (7) Good, still wanting in detail. (8) See note to 9. (9) Good. Taking your work as a whole, your chief faults are cramming too much on the plate, and getting the high lights too dense, so that there is no detail in the prints. It is, however, better than a good deal sent to our competitions.

S. NEWOC.—The only thing to do is to use encaustic paste. This would probably fill up the cracks to some extent.

CYANIN.—You are certainly at liberty to compete and at the same time answer queries.

B. SMART.—Either combination of an R.R. lens can be used by itself, and will give you about double the focus of the complete lens.

E. W. MALE.—Messrs. Adams or Fallowfield, of Charing Cross Road, would supply you with metal sheaths. We have not yet seen the lantern in question, but have no doubt it is an efficient instrument.

H. EYRE.—We do not at present know of anyone who would take the post of critic. It might be possible for us to see this later on.

W. COOPER, JUN.—All medals are now in the engravers' hands, and we hope to send them on as soon as we receive them.

J. R. C.—We have no lantern-slide competitions except the annual prize one. "Figure study" includes one or more figures.

H. A. SALWEY.—(1) Yes, a print may be entered or a lantern-slide from the same negative. (2) We have no monthly lantern-slide competition this year, only the big one. Duplicates can, however, be entered. (3) See answer to 2. (4) We shall shortly have the entry forms for the lantern competition ready, and then the subjects will be published.

FORREST.—We do not think you could improve on the lens you name in its special mount, fixing your camera in a box as you suggest. (2) It does not depend on the form of camera, but on the focus and aperture of the lens as to the nearest point in focus. We should recommend you to use bellows to your camera.

RUTAMA.—If there is any retouching required, it must be done by you or let severely alone. We should certainly prefer the L camera.

TRIX.—We think 1891 would be the most useful. (2) We cannot possibly give you any guide unless we know the subject, light, and the aperture of the lens.

J. WATSON.—(1) Good, (2) too hard, (3) good, (4) a little uneven, (5) too hard, (6) ditto, (7) a good slide spoilt by the drunken architecture, (8) good, (9) good, (10) funny perspective, (11) excellent, (12) too hard, (13) good. Your work is fully up to competition standard.

F. A. H.—(21) flat, over-exposed and uninteresting; what are the curious markings? (22 and 23) ditto, (24)

very bad, (25) ditto, (26) ditto. Negatives—(3) fearfully under-exposed, wants intensifying, (13) under-developed, (4) ditto, (7) fogged, (9) developer did not cover evenly, under-developed, (5) ditto, (10) fogged and under-developed. You have evidently not mastered the rudiments of developing, and we should like to hear what you are using and see if we can help you.

H. J. H. MARSDEN.—Put your present camera in a box, and use the lens you have; it will not be necessary to get a so-called fixed-focus lens. It would be almost better for you to get some practical man to have a look at your camera and see what is to be done with it.

J. C. O.—The whole print is over-exposed and fogged.

NEVILLE.—(1) It looks to us as though you had not toned the print at all; four hours is, as a rule, too long to wash prints, but in your case we think stale paper is the cause of the stains. (2) The camera was not upright, the plate was over-exposed, and the print is over-toned. (3) All negatives can be intensified; you will find some directions in our answers column this week.

NEMO.—(1) We'll exposed, printed, and toned. (2) Rather over-exposed, and the whites of the print are a little too hard, far too much foreground. (3) Good, wants a little more printing, quite up to our competition standard. (4) Bad, under-exposed, fogged, carelessly printed and toned. (5) Over-exposed, over-toned, would probably be better on gelatin-chloride paper. Over-exposed, under-printed, and over-toned; try intensifying the negative. (7) The camera was not upright; the negative looks as though it would bear intensifying with advantage. (8) Over-exposed and flat; see note to 7. (9). Well-exposed, printed, and toned, but had in an artistic point of view; never cut a bridge in half again; had you got further off and cut out the hideous figures on top, you might have made a picture of it.

Sale and Exchange.

RULES.

CHARGE.—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

ADDRESS.—All advertisements (which can be received up to Wednesday morning, 9 a.m.) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

CARRIAGE must be paid on all apparatus sent for report, and they will be returned carriage forward.

DEPOSITS.—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

COMMISSION.—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

PAYMENT. All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

ADVERTISEMENTS can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

PAYMENTS should be made in Postal Orders or Postage Stamps.

REPORTING.—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

Backgrounds.—Pair of handsome backgrounds in flatted oils, new, interior of room and garden scene with terrace, 8 ft. by 8½ in.; price 17s. 6d. and 15s.; approval with pleasure; photographs forwarded.—William Hare, photographer, Sutton, Surrey.

Cameras, Lenses, etc.—Lancaster's combination Multum-in-Parvo, whole-plate size, good as new, with lens and slide; take 2½s.—Livingstone, Tellynion, Tarnad, Aberdeen, N.B.

Facile hand-camera, with canvas cover, R.R. lens; cost £5 12s. 6d., sell for £3 15s.; International half-plate camera, stand, five mahogany and three Tylar's metal slides, no lens, £3; Taylor and Hobson's whole-plate rapid view lens, £2.—Geo. Fry, 34, High Street, Strood, Kent.

For sale, 12 by 10 teak camera (Capt. Fowke's pattern), two double and one single dark slides, and Koss' orthographic lens for 12 by 10 plates.—Address, George Bankart, West Walk, Leicester.

For sale, or exchange for whole-plate outfit, a first-class half-plate camera, three double slides, rectilinear lens, Thornton shutter, and sound leather case, by Photo Artists' Supply Association.—H. Shrublands, Sandreck Road, Tunbridge Wells.

A Raymont's patent half-plate camera, with three double dark slides, Ross' rapid symmetrical lens, and Stanley's patent focuser; all in splendid condition; cost about £12; will sell for 7 guineas, or exchange for microscope.—Apply to "Beta," 1, Creed Lane, London, E.C.

Hand-Cameras, etc.—Kodak, No. 4, folding 5 by 4, never unsealed; cost £10 7s 6d., for £8 10s.—W. H., 88, Thirlestane Road, Edinburgh.

Kin's hand-camera, takes twelve quarter-plates, R.R. lens, one full-sized, two small finders, automatic changer, Thornton-Pickard shutter; can be seen at the Editor's office.—No. 238, offices of this paper, 1, Creed Lane, E.C.

A Talbot and Eamer bag-changing hand-camera, wide-angle lens, view-finder, instantaneous and time shutter, carries twelve $3\frac{1}{2}$ by $2\frac{1}{2}$ plates; cost 31s., will take 25s., or exchange quarter-plate hand-camera—A. Davies, Leicester Boot Stores, Pontypidd.

Kodak, No. 2, cost £7, quite new, in case, and rolls of films; what offers?—G. F. Lyndon, The Henburys, King's Heath, Birmingham.

Lanterns, etc.—Newton's mahogany body lantern, $4\frac{1}{2}$ condenser, brass front, rack and pinion, blow-through jet, price 45s.—Lewis, 35, Broad Street, Reading.

Binial lantern, mahogany body, 4 in. condensers, jets, dissolver, curtain, complete, £8.—4, Hillside Road, Tulse Hill.

Optimus, Russian iron body, brass front, with demonstrating tank and three-wick lamp; used once; cost 50s., take 42s.; appointment by letter to—Barrett, 41, Cowley Road, Brixton.

Lantern Slides.—Magnificent hand-painted astronomical slides, some rackwork, by Carpenter and Westley, cheap; full particulars.—8, Montpelier Row, Blackheath, S.E.

Three dozen lantern slides, York, Scarborough, Antwerp, Brussels, 3s. 6d. doz.—25, Stonegate, York.

Set Swiss slides (50), Bala to Berne, reading, box, £2, carriage paid.—Smith, jun., 76, High Street, Wavertree.

Lenses, etc.—Optimus 1B quick-acting portrait lens, quarter-plate, stops, in case 50s.; whole-plate Instantograph lens and shutter, Lancaster's Iris, 30s.; both in every respect as good as new.—H. W., 18, Paulin Street, Bernondsey.

$1\frac{1}{2}$ by 5 R.R. lens, working $f/8$, Thornton-Pickard special rapid time and instantaneous shutter to fit hood of same; will sell for 50s the lot; approval, deposit.—H., 52, Shepherd's Bush Road, W.

Lancaster's half-plate instantaneous lens (Irie diaphragm) and shutter, equal to new, first-class results, guaranteed cost 30s., will take 21s; also Lancaster's V.A. Rectigraph, 19s. 6d., perfect.—E. Jackson, 71, Oxford Street, Manchester.

Sets.—Best London-made half-plate camera, three

double slides, R.R. lens, tripod, cost 6 guineas, equal new; only 90s.; approval.—14, George Street, Stroud, Glos.

Camera, half-plate, Optimus R.R. lens, all accessories, good and cheap.—North, Lea Mount Villa, Woodford, Essex.

Lancaster's $7\frac{1}{2}$ by 5 Instantograph (1889) with Optimus R.R. lens and two double dark slides with carriers for half, 5 by 4, and quarter-plates; splendid tripod, which cost £1; also plates, dishes, printing frames, view finder, chemicals, etc.; the lot, £5 5s. The camera has lately been repolished and brass bound by the makers, which has made it a splendid instrument.—Thos. Burnell, Bradmore College, Chiswick Lane, London, W.

For sale, Lancaster's half-plate International set, 1891.—E. Phillips, Bridge Street, Leatherhead.

Shutter.—Leisk's patent instantaneous shutter, without pneumatic release, 10s.—Geo. Waller, 3, Middlegate Street, Great Yarmouth.

Sunaries.—Collotype and lithographic apparatus, press, rollers, stones, chemicals, and materials; a bargain; £5, cost £9, or offers in exchange.—111, Kimberley Road, Nunhead, S.E.

Camera case, lined green baize, with strap and lock and key, nearly new, take half-plate camera, three backs, etc.; 7s.—Jones, Gazette Office, Malton.

AMATEUR PHOTOGRAPHER. complete, two first volumes, bound half roan, 30s. the lot; violoncello and bow, 70s.; sell or exchange for hand-camera.—Artist, 3, Walpole Street, Wolverhampton.

"Sun Artists," complete, proofs, £3; Eastman's half-plate roll-holder, scarcely used, excellent condition, £2.—W. Brocklebank, Christ Church, Oxford.

Half-plate Underwood's Instanto, square, reversing back and all movements, two double backs, cash, 50s.; Lancaster's 12 by 10 Multum enlarger, cash, 21s.; small still, quite new, 15s.; all in perfect condition; would exchange lot for whole-plate or larger camera.—Griffin, Binfield Terrace, Chingford, Essex.

Samuel's hand-camera, complete, 10s.; Tylar's half and quarter washing tanks, taps and racks, complete, 4s.; Thornton-Pickard time shutter, nearly new, 10s. 6d.; 15 by 12 dish, 3s. 6d.; splendid half-plate rolling press, 15s. 6d.—G. Gayhurst Road, Hackney.

132 AMATEUR PHOTOGRAPHERS, to June, 1891; 33 numbers *Photography*; lot, 5s.; Tylar's washer, cost 8s., price 2s. 6d.—Hancocks, Broony Hill, Hereford.

First-class half-plate lens, engraved "Houghton and Sons, Holborn, best rapid rectilinear," almost new, $f/7$, no defect, 45s.; aneroid barometer, watch size, new,

by Cary, Strand, silvered dish, perfect; cost 50s., 27s. 6d.—86, Albert Road, Croydon.

Valuable bargain: Fine mellow-toned violin in perfect preservation, suit lady or gentleman for orchestral or solo playing, complete with baize-lined case and good bow; take 15s. 6d. for all; violin alone worth double; money willingly returned if not approved; 20s. worth of unsoiled music given in free.—Graham, College Buildings, Ipswich.

Taylor and Hobson's quarter detective lens and Ker-shaw's shutter, new, 60s.; good camera and three slides, double, 20s.—H. Cooke, 3, Weekday Cross, Nottingham.

Pearson and Denham's reducing camera, from half-plate to lantern size; cost 35s., price 25s.; first-class condition.—Scargill, Station Road, Batley.

WANTED.

Cameras, etc.—Fallowfield's 1891 special quarter-plate camera, long extension, or Optimus extra long extension quarter-plate, cheap for cash.—Geo. Waller, 3, Middlegate Street, Great Yarmouth.

Good camera, 5 by 4, with slides, perfect order, good maker; state full particulars and lowest price.—Hazley, Blackrock, Dublin.

A Lancaster's Multum in Parvo, about 15 by 12, must be in good condition; approval.—Brock, Winton Park, Northwich.

Hand-Cameras, etc.—Loman's "Reflex" hand-camera, also c. d. v. portrait lens, cheap for cash.—Pratt, East Bridgeford, Notts.

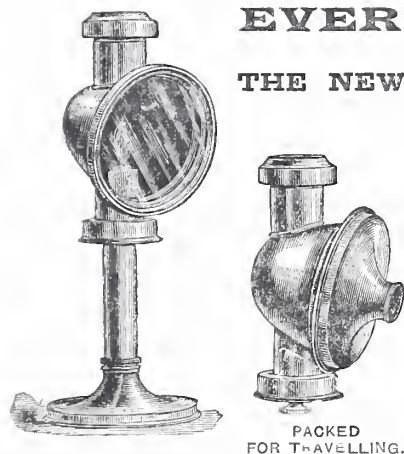
Wanted, good hand-camera in exchange for coloured lantern slides; have 60 Scotland, 53 Palestine, 38 stamps, and Nelly's Champion.—J. Pearson, Ainsworth Road, Radcliffe.

Negatives.—Loan or purchase, negatives of subjects of popular and artistic interest, scenery, etc.; size about cabinet.—Ashton and Sons, Church Walk, Southport.

Set.—Wanted, first-class whole-plate outfit; state full particulars, makers' names, and lowest cash price.—H., Shrublands, Sandrock Road, Tunbridge Wells.

Sundries.—4 or $4\frac{1}{2}$ in. condensers, must be good and cheap.—S. Stamp, Wellington Street, Stockton.

Amateur wants few photographic sundries and chemicals, furnishing dark-room, must be reasonable; send (returnable) priced list; letters only.—Knight, Blackrock, Dublin.



EVERY AMATEUR SHOULD POSSESS THE NEW "HOLIDAY" CANDLE LAMP. (Patent.)

THE ONLY LAMP THAT COMBINES
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The AMATEUR PHOTOGRAPHER

Telephone No. 1645 Telegraphic Address: VINEY, LONDON

Office: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 382. VOL. XV.]

FRIDAY, JANUARY 29, 1892.

[PRICE TWOPENCE.]

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—1891 Stereoscopic Competition Award—Mr. Hodges' Articles on "Elementary Photography"—Index—"Holidays with the Camera" awards—Manchester Exhibition—A Stray Camera—Monthly Competition Rules—Monograph on Japanese Earthquake.

LETTERS TO THE EDITOR.—Society for Midlands (G. Bankart)—Vienna Exhibition (Resident)—Prints Adhering (J. C. Breeze) Counting Exposures (The Smith)—Frilling after Development (G. de B. Ball).

ARTICLES.—Enlarging (Ammer Tugher)—Photographic Procedure (Wall)—Elementary Photography (J. A. Hodges)—The Lantern and how to Use it (C. Goodwin Norton)—The Actinograph (Hurter and Driffeld).

EXHIBITIONS.—Devonport Camera Club.

REVIEWS.—The Optical Lantern (Pringle)—Die Praxis der Moment Photographie (David and Scolik)—Photographic Review of Reviews (Welford).

APPARATUS.—Noble's Gelatine Lantern Slides.

SOCIETIES' MEETINGS.—Ashton-under-Lyne—Barrow in Furness—Bristol—Brixton and Clapham—Camera Club—Cardiff—Croydon Devonport—East London—Faversham—Glasgow and West Scotland—Glasgow—Holmfirth—Kendal—Leigh—Lewes—Liverpool Camera Club—Liverpool Y.M.C.A.—North Middlesex—Newcastle—Phot. Soc. of Great Britain—Plymouth—Pudsey—Rochdale and District—South London—Spen Valley—Sydenham—Tyneside—West London.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All Communications should reach the Editor by Tuesday.)

TERMS OF SUBSCRIPTION.—
UNITED KINGDOM..... Six Months, 5s. 6d. Twelve Months, 10s. 10d.
POSTAL UNION " " 6s. 6d. " " 13s. 0d.
OUT OF POSTAL UNION " " 7s. 9d. " " 15s. 3d.

TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.)

"Amateur Photographer" Monthly Competition No. 33.—
"SEA PIECES OR RIVER SCENERY." Latest day, February 22nd.
—Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, March 11th.)

CIRCUMSTANCES over which we unfortunately had no control prevented our giving the result of the 1891 Stereoscopic Slide Competition last week. All the sets of slides were numbered and sent to Mr. W. I. Chadwick, the Hon. Sec. of the Stereoscopic Club, and by him placed before the President, Mr. W. J. Cunliffe, and the members, and after careful examination the awards were made. It was impossible for the competitors to be known to the judges and from a glance at the list of awards and the slides we have to tender our hearty thanks to the Stereoscopic Club and to Mr. Chadwick, who has taken a great deal of trouble in the matter, for the careful way in which the awards were made. The medals have undoubtedly gone to the best workers.

CLASS I.—LANDSCAPE, SEA PIECES, AND RIVER SCENERY, WITH OR WITHOUT FIGURES.

First Prize, Gold Medal.

CHAS. LORD,
Oak Lawn,
Ardenshaw, near Manchester.

Second Prize, Silver Medal.

JOHN E. AUSTIN,
Detling, Maidstone.

Third Prize, Bronze Medal.

WALLACE THOMPSON,
78, Turf Lane,
Hollinwood, near Oldham.

Fourth Prize, First Certificate.

WILLIAM BEVAN,
55, Railway Street,
Crewe.

Fifth Prize, Second Certificate.

W. B. CASSINGHAM,
27, Cambridge Street,
Tunbridge Wells.

CLASS II.—ARCHITECTURE, INTERIOR OR EXTERIOR.

In this class the judges state there is no work which is up to gold medal standard, and therefore the awards, in accordance with this opinion, will be:—

First Prize, Silver Medal.

WILLIAM TOMKINSON,
Silverdale, Victoria Park,
Wavertree, Liverpool.

Second Prize, Bronze Medal.

FRED. MACKENZIE,
127, Wellington Street,
Glasgow.

Third Prize, Certificate.

WALTER W. NAUNTON,
9, The Square,
Shrewsbury.

There were twenty-seven competitors in all, and the standard of work was decidedly good. The medals will be put in hand at once, and as soon as ready will be forwarded to the successful candidates.

The Prize Slides, as competitors are aware, are to be loaned to the proprietors of the AMATEUR PHOTOGRAPHER for a period of not less than six months, in order that photographic societies and others interested in stereoscopic photography may have the opportunity of inspecting them. The unsuccessful slides will be returned, we hope, this week.

In chatting the matter over with Mr. Chadwick, who, we need not say, is a perfect enthusiast on this subject, he remarked, "You've no competition this year." Our reply was, "Well, really, we did not think it worth while to have one, as nothing seems to be able to galvanise stereoscopic photography into life and general favour." A minute later we were sorry we had spoken. We were at once overwhelmed with facts and data, which proved that it is not only finding general favour, but is full of increasing vitality and life, and, under these circumstances, we shall take the matter into consideration, presuming, of course, stereoscopic workers will support us, and we shall be glad to hear their views on the subject.

Our readers will note that we commence this week a series of articles on "Elementary Photography," by Mr. J. A. Hodges. The aim of these articles will be to form a purely elementary handbook, written in plain and simple language, giving one proved method of performing the necessary manipulations. Mr. Hodges is well known as being one of the most energetic members of the West London Photographic Society, and has several times been a contributor to our pages. He was an old wet-plate worker before the introduction of commercial dry plates, and combines good technical knowledge with artistic tastes, as is sufficiently proved by the fact of his having won about twenty medals, and never having exhibited without being medalled. To the advanced worker his articles may possibly be of little use; for such they are not written, but for the larger and ever increasing army of tyros, from whom we got many a pitiful letter asking for help.

PROBABLY many of our readers noticed that the index issued with our last number was not complete. By some unfortunate mishap, the printers, after the proofs had been passed for press, omitted one page. We, however, set the matter right this week, and it will in no way interfere with the binding of any volume.

OUR attention has been drawn to the fact that only nine awards were made in connection with "Holidays with the Camera," but as three of the promised awards were for past prize winners, and as we were entirely in the hands of the judges, we have no further comment to make than that if the judges did not see fit to award more than nine prizes, we are content to abide by their decision, and so must all the competitors be.

THE Manchester Amateur Photographic Society intends holding an exhibition of members' work from February 9th to February 13th, both dates inclusive. A lecture and lantern-slide exhibition will be given each evening. From this society we have received a copy of the annual report and list of members, from which it appears they have about 400 members and a substantial balance at the bank. The list of papers and work of the past year is really formidable, and it speaks well for the energy and interest of the members.

WE are requested by the Paget Prize Plate Company to announce "that a box containing a camera and some other things has been sent to them, apparently in mistake, as they know nothing of it." The Company will be glad if the owner will write and claim these stray goods and relieve them of the responsibility and trouble of storing them.

WE direct the attention of all would-be competitors in our next Monthly Competition to the rules governing the same, and particularly to the dates for receiving photographs. Notwithstanding the announcement of the time for closing the last competition had been made for nearly a month, we received more than a dozen prints late, actually on Tuesday. Fortunately for these competitors, their work did not come up to prize standard, but had it done so it would most certainly have been disqualified, as the whole of the prints were judged on Monday night by an expert and an artist.

We do not think we ask too much from either competitors or correspondents, when we request them to kindly conform to the rules we have laid down, rules that are founded on considerable experience, and which we have found essential to the successful carrying out of our work.

PROFS. MILNE and W. K. BURTON have sent us notice that they will shortly issue a handsomely bound volume illustrating and describing the effects of the Nagoya-Gifu earthquake of October 28th ult. It will be illustrated by about twenty-five large photographic plates, and, judging from the specimen sheet and illustration the work will form one of those valuable monographs, for the illustrating of which photography is so well adapted, and if, as in the case in point, the illustrations are permanent, such will form an invaluable record for posterity.

Letters to the Editor.

SOCIETY FOR THE MIDLANDS.

SIR,—It is proposed to form a Midland Counties' Postal Photographic Society, if a sufficient number of amateurs are found to be favourable to the movement.

Amateur photographers only to become members.

The principal object of the Society would be the monthly circulation of photographs (in albums or portfolios), accompanied by a notebook for criticism of the prints, and the award of moderate prizes for the two best in each set; the awards to be made by the votes of the members, and recorded in the notebook.

It is proposed at present to confine the Society to the midland counties, and the number of members to fifty, as by that means the district will be compact, and the circulation of parcels prompt and inexpensive.

Working details will be submitted later (for discussion) if it is found that sufficient names are sent in support of the idea (provisionally).

The number of members admitted should be proportionate to each "county district," if there are sufficient applications from each district; if not, vacancies can be filled up from any other district.

Sizes of photographs to be from half plate to 12 by 10 inclusive, and to be printed only in some *permanent* process, as platinotype or carbon.

A President and General Secretary to be appointed, and District Secretaries in each county, who would form a committee of management.

It would be pleasant, if possible, to have each year a general meeting in the various districts alternately, at a time of year when the members could combine business, outdoor photography, and social intercourse, so as to form an agreeable excursion under the guidance of the secretary for that district.

Applicants for admission to submit prints (when required) as proof of their photographic ability, for the inspection of the committee (when formed), the *quality* of the work to form a guide as to *precedence for election*.

Ladies or gentlemen wishing to support the movement are requested to send their names and addresses (provisionally) to

GEORGE BANKART

West Walk, Leicester.

(Hon. Sec., pro. tem.)

* * * *

VIENNA EXHIBITION, 1891.

SIR,—I thought "Expectans" would have been answered officially, or I should have written earlier to inform him that immediately on seeing his letter in your issue of the 8th inst. I made enquiries and found that no exhibitors have as yet received their rewards. The diplomas are, however, actually in hand, and it is hoped that they will be sent out very soon.

"Expectans" evidently does not know Vienna. Nothing is done in a hurry here; the rule appears to be "never do to-day what you can possibly put off until to-morrow.—Yours truly,
Vienna, January 23rd.

RESIDENT.

* * * *

PRINTS ADHERING.

SIR,—I shall be glad if you or any of the readers of the AMATEUR PHOTOGRAPHER can give me any assistance in respect to getting prints on gelatino-chloride printing-out paper that have been squeezed on to both polished and frosted glass, off the glass, without leaving a portion of the print fast on the glass.

I cleaned the glass first with hydrochloric acid, afterwards with liquid ammonia, and when dry rubbed it slightly with powdered talc on cotton wool, but with the exception of three prints (out of eleven) all have suffered from portions adhering to the glass.—Yours truly
J. C. BREEZE.

* * * *

COUNTING EXPOSURES.

SIR,—In the paragraph on "Counting the time of exposure" (No. 379, p. 23), it is suggested that a bunch of keys tied to a piece of string eighteen inches long, when set swinging would beat half seconds.

Now, it is so seldom that one has the chance of picking a figurative hole in aught that comes from the pen of Mr. Wall that the present opportunity (which, by the way, I left for some other carping individual to seize last week) is too good to be missed altogether. A pendulum to beat half seconds must be 9.78 inches in length, and if some of your readers who are mathematical tritons among ditto minnows will work it out, a pendulum of eighteen inches will be found to take nearly three quarters of a second to each vibration.

There is this to be said, however—first, the paragraph does not direct the weight to be fixed to the end of the string; and, second, perhaps Mr. Wall means the string to be doubled.

THE SMITH.

The error in question was a slip on the part of Mr. Wall, and was immediately noted by him when it appeared.—ED.

* * * *

FRILLING AFTER DEVELOPMENT.

SIR,—I develop my plates in a bath-room where the temperature is high owing to hot water connection. My water supply for washing coming from cistern on roof, and very cold, have been troubled with plate frilling. I have found out that if when the plate is removed from the developer cold water is applied to back of plate for some short time, the washing can be proceeded with without any damage from frilling. If my experience is deemed of any use to brother-workers, I shall be glad if you convey it.—Yours faithfully,
G. DE B. BALL.

This is a case in which the acid, or alum and hypo, fixing bath would be found useful.—ED.

Enlarging.

BY AMMER TUGHER.

(Continued from page 61.)

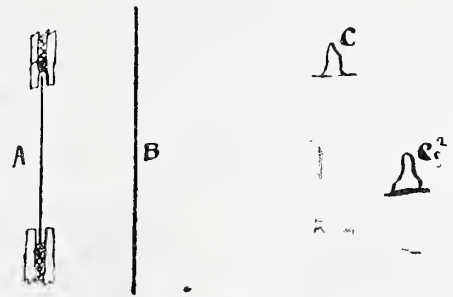
For printing I decidedly prefer daylight. I have made a simple wooden frame the exact size of my window, and covered with brown paper. There are really two frames, hinged together, so that I can fold them when not in use. I have cut a hole in the paper to allow the light to fall on to the negative, and I may here say I have never found a reflector, as sometimes advised, at all necessary.

When in use I screw frame No. 1 down to a long board, which I place on a table under the window, and then push the frame with the negative, film inward, as close to the hole in the brown paper as I can. By adjusting the distance of the lens from the negative I can, of course, either reduce, copy exact size, or enlarge.*

I have enlarged by artificial light, and when doing so I put a screen of frosted glass a short distance from the negative, and about a foot from that I put two duplex lamps, the relative position of each being as in fig. 4, as the light was better distributed by the two lamps being on different levels.

As for exposure, it is impossible to give any information. Plucky, not at all dense, negatives are the best, and on the rapid Ilford paper $\frac{1}{2}$ min. to 5 mins. are needed, according to the colour and density of the negative and quality of the light. I prefer the soft grey colour of Argentytype, but it seems to be a very slow paper. I follow the instructions issued with the paper for development, etc., and need say nothing on that subject.

A hint as to frosted glass may be of service. Many formulae for substitutes have been issued, but why not have the real thing? If emery powder cannot be obtained, get almost any of the knife-powders that are sold, as they are nearly all only emery powder. Put a little powder on the glass to be frosted, make it into a thin paste with water, press a small piece of glass—or, better still, pumice



A. Negative. B. Frosted glass. CC². Lamp flames.

FIG. 4.

stone which has been worn to a flat surface—on it, and then rub it rapidly over the surface. As the powder gets fine, as it soon does, put some more on the glass, and so keep on until you get a fine grain on the surface. Any coarse frosted glass can be treated in the same way so as to produce beautifully fine focussing screens, better than any substitute. If glass already frosted be taken, the thing will be done more quickly, but it takes very little time even with ordinary window glass.

* It might be interesting to add that, having photographed a building by some accident with a tilted camera, I was able to get rid of the convergent lines by putting the faulty negative in the frame as if for enlarging, and then copying on to a plate put in a printing frame placed in the place of the bromide paper, only in a slanting position.

Photographic Procedure.

By E. J. WALL.

Author of the "Dictionary of Photography."

SECTION IV.—THE DARK-ROOM (continued).

MESSRS. MARION AND Co.'s special monochromatic lamp, referred to last week, is shown in fig. 102, and their bypass gas lamp in fig. 103. Messrs. Perken, Son, and Rayment's gas lamp is shown in fig. 104, and their paraffin lamp in fig. 105.



FIG. 102.

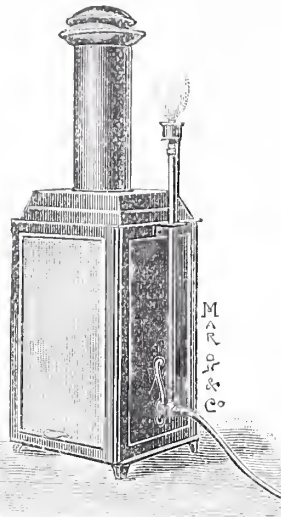


FIG. 103.

General Fittings of the Dark-room.—For those who desire to fit up their dark-rooms in luxurious style, many commercial firms have introduced special contrivances of more or less elaborate design. Thus Messrs. Geo. Houghton and Son have a special form of dark-room developing sink, shown in fig. 106. J. J. Griffin and Co., W. F. Stanley and Co., Marion and Co., all have somewhat similar designs, Stanley's being shown in fig. 107; whilst Messrs. Rouch, Preston, and Fallowfield have simpler but no less efficient fittings (figs. 108, 109, and 111).

To the amateur who is content with home-made arrangements, an empty sugar box lined with lead may form an efficient sink, or a well-made wooden sink may be knocked up by the local jobbing carpenter, and if given a coating of beeswax, resin, and Venice turpentine, ironed in with a hot flat-iron, if you can get one, or, preferably, an old plaster-iron, borrowed from the nearest chemist, the sink may be

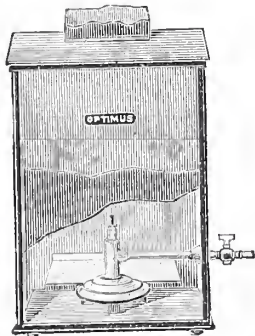


FIG. 104.

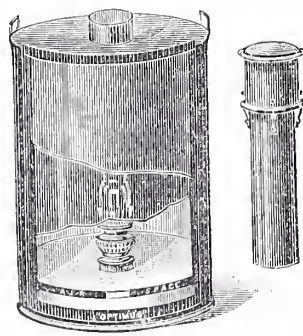


FIG. 105.

made watertight and useful. Personally I have found that placing the wooden sink in front of the fire, and when warm painting it with a solution of one part of common resin in twenty parts turpentine is a very good ground to work upon. And after the wood has been well saturated with this inside and out, two or three coats of Aspinall's bath enamel (allowing one coat to thoroughly dry before the next is applied) is by no means a bad waterproof coat-

ing; but almost anyone with a good big hammer, a good strong arm, and a little patience may safely venture to lead-line his own sinks with sheet lead. All sinks should have a fall—this is, I believe, the technical term—that is to say, one end should be higher than the other, and at the lower end should be the outlet for the water.

The developing bench proper may be either at one side of the sink, or else a raised perforated stand in the sink itself may be used. Household exigencies denied the writer the sole use of his dark-room, a sink was out of the question, and the difficulty was overcome by nailing to the working bench four strips of wood, two inches in height and one inch in breadth, in the form of an oblong. In one corner a hole was made, and a piece of lead piping carried through, the end of the pipe being flattened out and nailed down to the top of the bench. In this a bottle, oiled outside, was inserted upside down and rather thin liquid Portland cement poured on to the bench, quickly smoothed out with a trowel, and allowed to find its own level, dry Portland cement being dusted over it and carefully smoothed in with the trowel. When set, the bottle was removed, and a sink impermeable to water was obtained. This was further protected by two coats of paint, and any solutions spilt quickly found their way down the pipe to a tub placed underneath.

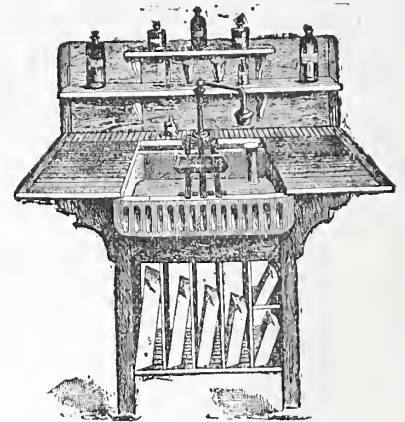


FIG. 106.

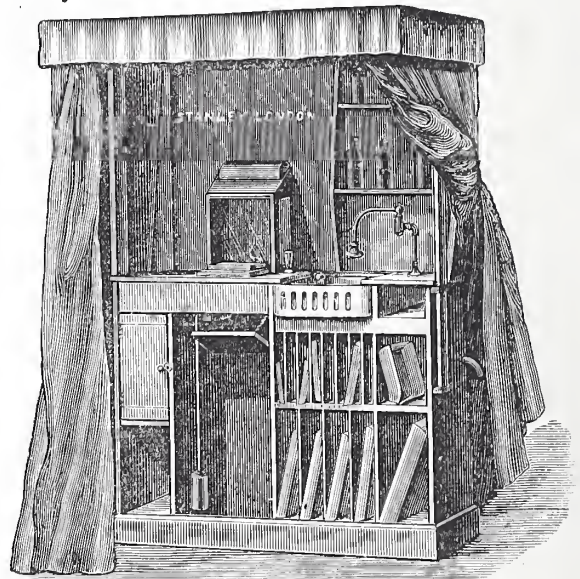


FIG. 107.

The height of the bench is always a consideration. It should be just so that the operator may sit comfortably and watch all operations, there should not be any straining, nor should it be necessary to stand. Any discomfort in the dark-room certainly tends to carelessness in working. If we are wearied by standing or straining, we are apt to spoil just the last moments of developing by hurrying; our senses, which should be then abnormally acute, are dulled by personal discomfort, and we are apt to let that far out

weigh the necessary time and attention to produce a perfect result.

Messrs. Davenport and Co. have a very handy little dark room, the interior of which is seen in fig. 110, which can stand in the corner of a room and does not in any way interfere with the use of the room for ordinary purposes. The same firm also have some very handy sinks well worth attention.

I have been in many dark-rooms, but not in one did I find that necessary attention to comfort and ease in working which I think essential. In some the developing bench was but a narrow shelf, frequently a long way out of the horizontal, so that it became necessary to prop a dish up with something to make it stand level; in others, the array

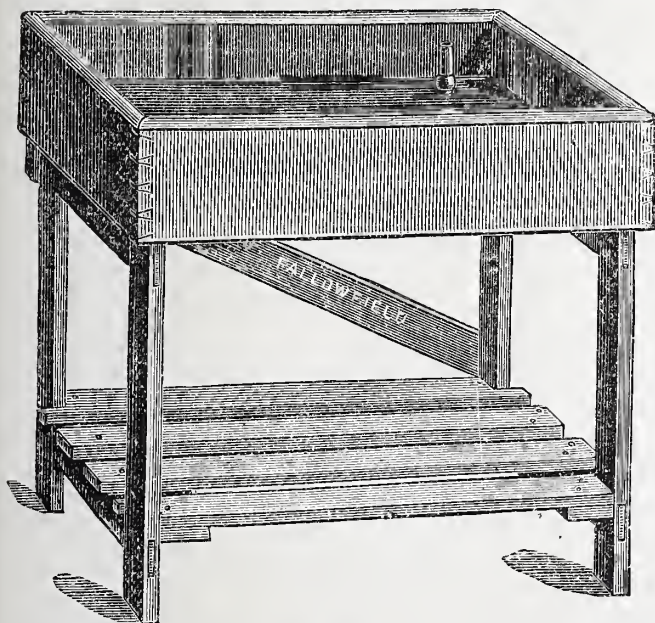


FIG. 108.

of bottles, many too without labels, was appalling, and one could not move an arm or turn round without hearing an ominous crash followed by a suggestive gurgle amongst one's feet. And one always seems to have larger and more feet in these places than usual, and a slight shuffle is followed by some curious sounds, and you are told, "O, that is

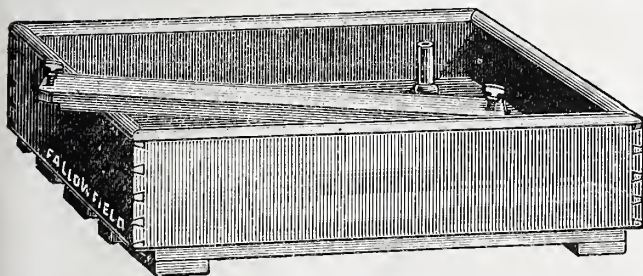


FIG. 109.

some of my wife's best crockery stored on the floor!" I have from past experiences mentally registered a vow never to work in anybody's china closet again, or if I do to be careful to depart before there has been time to discover whether I have done any damage. It is not kind to ask a man with big pedal extremities or protuberant and aggressive elbows to work in a confined closet where stacks of china and cut glass are stored.

There should always be one or more shelves in the dark-room—one in close proximity to the developing bench, on which can and should be placed the bottles, and those

bottles only absolutely necessary for the developing. Stock bottles should be placed on another shelf. All bottles

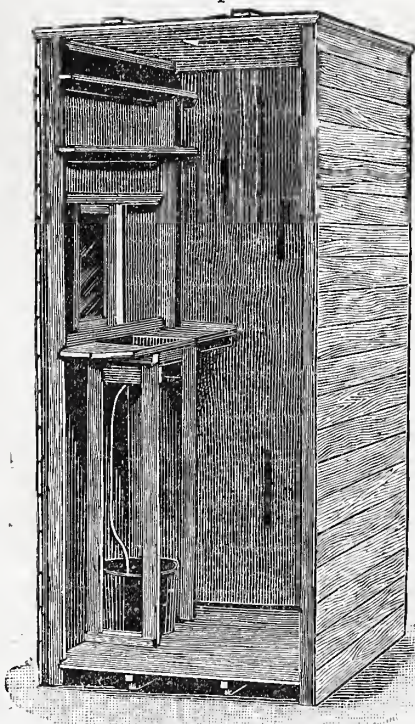


FIG. 110.

should be labelled, but it is no use putting on labels if, as usually the case, they are allowed to stand in the damp dark-room; damp soon fetches them off, and stained fingers soon obliterate the writing. It is preferable to use the printed labels, which can be obtained from most photographic dealers, and when these have been affixed to the bottles and have become dry, they should be painted with a warm size, made by dissolving 20 grains of gelatine in an ounce of water. This should also be allowed to thoroughly dry, and the label should

then be varnished by the aid of a camel's hair brush, with one or two coats of ordinary white hard varnish. This coating of varnish prevents the effects of damp and any solution which runs down the bottle. Every bottle in my dark-room bears a label which tells me at once the constituents of the solution, and the principal ingredient is written in very large letters so as to be at once legible.

There are generally two ways of doing anything and everything, and there are two ways of pouring liquid out of a bottle. Some people who have not had much practice invariably pour from a bottle so that a drop, if such adheres to the lip of the bottle, will always run down the label. All liquids should be poured from a bottle so that the drop should run down the back, and the hand should never touch the label; it is, with a little practice, quite easy to take up a bottle without covering the label with the hand, one is thus able to read the label, and at the same time it is kept clean.

Messrs. W. Rouch and Company's dark tent, shown in fig. 111, is, as will be seen from the illustration, provided with a light-tight curtain, which is tied round the operator's waist, and can when not in use be folded up and stored in a corner of the room.



FIG. 111.

Elementary Photography.

By JOHN A. HODGES.

CHAPTER I.

Introduction—The Aim of the Writer—Primary Difficulties—Selection of Apparatus—Second-hand Goods—Complete Sets—The Camera—The Size of the Photograph—Pros and Cons—Sizes of Plates—The Half plate Recommended—Different Forms of Cameras described—Good Advice—Probable Cost—Modern Improvements—The Reversing Back—The Swing Back—The Rising and Falling Front—Double Backs—Changing Boxes—The Tripod Stand; its Attributes; Cost—Rigidity of Apparatus—Practical Tests.

It would, perhaps, be well in commencing this series of articles, that I should briefly state the object with which they have been written, and it may be done in a few words. My aim will be to provide the amateur who is about to take up the practice of photography for the first time, with such information as will enable him to take a successful photograph. I shall endeavour, as far as possible, to avoid the use of technical language, but when it becomes necessary to do so I shall make a point of explaining the meaning of the terms employed. Writing for the class to which I have alluded, I shall assume an entire ignorance on the part of my readers of all matters pertaining to photography. With theory I shall not attempt to deal—its consideration does not come within the scope of these articles. My endeavour will be to convey the information which I desire to impart to the younger readers of the *AMATEUR PHOTOGRAPHER* in as simple language as possible.

Most treatises on photography commence by giving a more or less exhaustive account of the history of the art, but, believing that the average reader in nine cases out of ten deliberately skips that portion of the work, I propose to depart from the course which precedent has laid down, and, by omitting all historical references, to that extent be original.

The first difficulty with which the beginner will be confronted will be the selection of the necessary apparatus. Text-books frequently tell him to be guided by the advice of a friend, but as in the majority of cases he probably will have no friend possessing the requisite knowledge to whom he can appeal, the advice has little practical value. Where, however, competent assistance can be obtained it should certainly be accepted.

The purchase of second-hand apparatus should be avoided by the tyro, for although at times undoubted bargains may be picked up by those whose practical knowledge enables them to form a correct estimate of the value of the articles offered for sale, the novice lacking that knowledge may find himself burdened with apparatus, which will not only be useless to him, but which he may find a great difficulty in disposing of.

Nor should I recommend the purchase of a complete set of apparatus, for, unless a high price be paid for it, in which case no economy will be effected, the quality of the articles supplied will probably not be so good as it might have been had the articles been purchased separately, and it will, moreover, frequently be found necessary to considerably supplement the list of articles comprised in the "complete" set, before it can be made really ready for work.

Naturally the first piece of apparatus which will claim our attention is the camera, which, it will probably be unnecessary to state, is the instrument to which the lens is attached, and by means of which the sensitive plate is exposed to the action of light. Now before we buy our camera we must decide what sized photographs we wish to produce, and in coming to a decision on this point there are two important factors to which we should give due considera-

tion, namely, the amount of money which we wish to expend, and the extent of our powers of endurance, because the carrying of heavy apparatus in the field is more or less a tax upon one's strength, and if the weight of the "kit," as the complete *impedimenta* of the photographer is usually designated, be greater than we can carry without inducing a feeling of fatigue, a great part of the pleasure and profit which we should otherwise derive from our hobby would be lost. I can speak with some authority upon this point, for during the sixteen years that I have practised photography I have worked with cameras of all sizes, from 12 by 10 downwards, and the experience so gained leads me to the conclusion that if comfort and convenience are to be studied, the size known as half-plate should not be exceeded.

The sensitive plates, and the cameras in which they are used, it may be here convenient to state, are made in certain standard sizes according to the following list:— $3\frac{1}{4}$ by $3\frac{1}{4}$, or lantern plate, so called because it is of the same dimensions as an ordinary lantern slide; $4\frac{1}{4}$ by $3\frac{1}{4}$, also called "quarter-plate"; 5 by 4 , $6\frac{3}{4}$ by $3\frac{1}{4}$ (used for producing stereoscopic pictures); $6\frac{1}{2}$ by $4\frac{3}{4}$ (called also "half-plate"); $7\frac{1}{4}$ by $4\frac{1}{2}$, $7\frac{1}{2}$ by 5 , 8 by 5 ; $8\frac{1}{2}$ by $6\frac{1}{2}$ ("whole-plate"); 9 by 7 , 10 by 8 , 12 by 10 , 15 by 12 , 18 by 16 . I have mentioned weight as being one of the matters which should be considered in deciding upon the size of the camera, but the question of cost also largely bears upon the subject, for the intending purchaser should bear in mind that though the difference in the initial cost between a small camera and a large one may not be very great, the expense will not end there, for the large camera will necessitate the use of large plates, more chemicals, and, in fact, a greater all-round expenditure. The popular sizes are the quarter-plate, the half-plate, and the whole-plate, and of these I strongly recommend the reader to purchase the half-plate, and I do so for the following reasons. In the first place the size is well proportioned, and it makes a pleasing picture, sufficiently large, when suitably mounted, to look well, framed and hung upon a wall; its weight, with the necessary accessory apparatus, is such that it may be carried without discomfort by persons of ordinary physique, while the cost of the plates and materials necessary for the production of the finished pictures will be but moderate. The quarter-plate is rather too small, and when proficiency is attained the possessor would probably sigh for something larger. The whole-plate, on the other hand, will probably prove too heavy for most people to carry about with comfort, and the necessary plates and materials will cost more than double the amount necessary to work a half-plate.

The would-be purchaser, upon entering the show-room of a dealer in photographic materials, will probably experience some embarrassment in endeavouring to make a selection from the numerous cameras which will be placed before him. But a closer examination will reveal the fact that, broadly speaking, all the apparently different cameras are really constructed upon one or other of two principles, of which figs. 1 and 2 may be taken as types. In fig. 1, the more modern type, the pinion, by which the focussing of the picture is effected, is in front, the bellows being conical. Lightness and compactness are the advantages of this form of camera. The other, and older, type of camera is shown in fig. 2, and it will be seen that, in this case, the focussing is effected from the rear by attaching the pinion to the back frame which holds the focussing screen. This form of camera is rather more bulky and slightly heavier than the one last mentioned, but for practical work is to be preferred. I would here most

* Those sizes marked with an asterisk should be avoided, as, not being generally used, a difficulty is sometimes experienced in obtaining the plates.

strongly advise the reader to expend a reasonable sum in the purchase of his camera, and not to yield, from mistaken motives of economy to the temptation of buying an instrument which may prove both cheap and nasty. For obvious reasons it is impossible in these pages to recommend the cameras of particular dealers, but the reader will be quite safe in placing himself in the hands of any of the advertisers in this journal. A good, serviceable half-plate camera, with three double backs, will be found to cost from about £4 10s. to £6, according to the degree of finish bestowed upon the instrument.

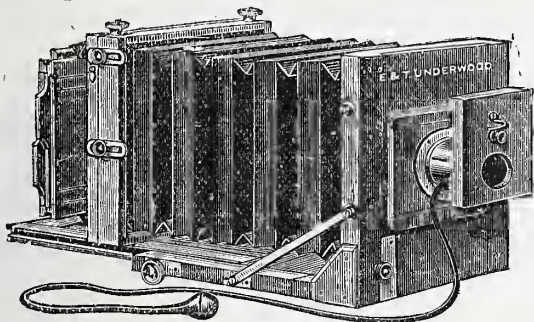


FIG. 1.

Most modern cameras are provided with certain adjustments, some of which may be regarded as essential to successful working. The first of these is what is called "the reversing back;" this addition allows the position of the ground-glass to be reversed, and, without disturbing the camera, enables the user to take either an upright or a horizontal picture.

Another very essential feature in a perfect camera is what is known as a swing back; this is an adjustment which enables the ground-glass to be brought parallel with a building when the tilting of the camera is unavoidable. The use of this adjunct will be fully explained hereafter.

The third important movement is the rising and falling front. It consists in providing the front of the camera which carries the lens with an up and down motion, and its use enables the position of the picture on the focussing-screen to be varied. These three special movements, reversing back, swing back, and rising and falling front, are here enumerated in order that the reader, when purchasing, may stipulate for their inclusion in the camera which he selects. With the camera will be provided a certain number of thin wooden cases, usually three, for holding the sensitive plates;

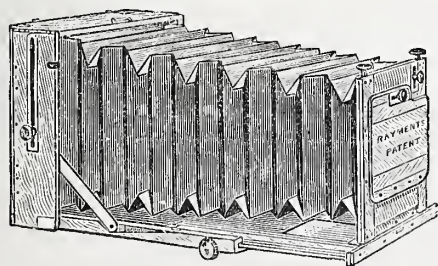


FIG. 2.

these are technically known as double backs, or dark-slides, each being capable of holding two plates. An alternative method of carrying and exposing the plates is by the use of what is known as a changing box, but I only mention the device here to warn the reader against adopting it, as in the hands of a novice it would most probably fail.

The next piece of apparatus to which we may turn our attention is the tripod stand upon which the camera is supported. There is an immense variety of tripod stands in the market, but a great many are of no practical use. The two points to be looked for in selecting a tripod are that

its height should be capable of adjustment, and that when fully extended it should be rigid and free from tremor. The form of tripod which I advise the reader to purchase is that which is known as the sliding-leg pattern; it is a stock pattern, and can be obtained at most dealers for about 12s. 6d. The head should be sufficiently large to present a firm base upon which to rest the camera.

Rigidity is one of the most essential features of the camera and stand, and with a view of determining whether the apparatus selected fulfils this condition, the would-be purchaser should insist upon the tripod selected being set up to its full height, and the camera screwed into position upon it. It is useless to place a rigid camera on a shaky stand, and equally so to put a rickety camera on a firm tripod. In each case the stability of one piece of apparatus is negatived by the defect in the other.

Taking the apparatus in its proper order the lens would be the next part of the outfit to receive consideration, but as its selection is an important matter, and one that requires to be dealt with at some length, I propose to devote a special chapter to it.



The Lantern, and How to Use it.

By C. GOODWIN NORTON.

CHAPTER VII.

(Continued from page 42.)

Lantern Bodies.—The cheapest kinds are made of japanned tin; they look very nice when new, but the enamel is liable to chip off with the heat, and the tin, not usually very thick, is easily battered.

The next better lanterns are made of Russian iron, which is generally understood to be made in Birmingham; this has a dull smooth surface, and if kept from actual damp does not readily rust. If, however, a spot of rust appear it should be removed with a little paraffin and lime; this will prevent it rusting again. Never attempt to polish or brighten Russian iron, as the surface will be removed and the part underneath rapidly deteriorate.

The best material for lanterns is undoubtedly mahogany lined with Russian iron; the thickness of the wood should be proportioned to the size of the lantern, about half an inch for a single, five-eighths of an inch for a biennial, and three-quarters of an inch or even more for a heavy triple. To be strong, the body should be framed together like an ordinary door, the mortices going nearly through, and not simply fastened with a tongue, as the cheaper kinds are. The base should be as large as possible without being clumsy. It is a great advantage to have framed doors on each side, to afford facility for adjusting the light, and to have easy access to the condenser. Provided the lantern body is sufficiently strong and properly constructed, to afford ample support for the front and stages, and that it excludes any stray light, its general appearance is a matter of little consequence. But if the lantern is for public exhibition, it is well to have it as showy as possible. The general public, as at present instructed, expect great things from polished mahogany and lacquered brass-work; an inferior-looking instrument gives a bad impression before the show begins. But for this the body might be made without ornament, the metal work painted a dull black, and the money thus saved be advantageously spent on the lenses and slides.

The cheapest form of lantern in the market may be purchased for about thirty shillings or even less. This has a tin body, four-inch condensor, stage for holding the slides, portrait lens, three-wick lamp, and gives really excellent

results at the price (fig. 12.). Better quality tin lanterns can be had, having additional fittings, such as open stages for chemical experiments, and with front tubes of brass, instead of tin.

The Russian iron lanterns have generally an arrangement by which the whole front can slide forward to permit a longer focus lens being used, and also to utilise the whole of the rays of light when a slide smaller than three inches is used. All these lanterns can be used with an oil lamp, or with lime-light by the addition of a tray and stem and short chimney.

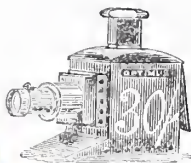


FIG. 12.

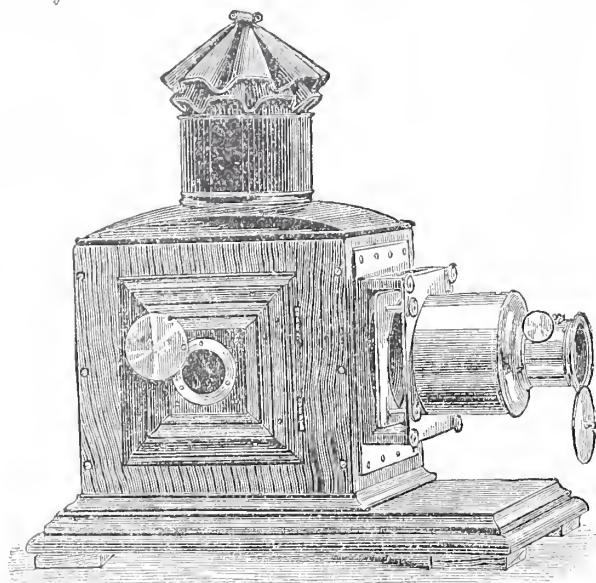


FIG. 13.

In the superior lanterns with mahogany bodies, the stages are differently constructed, as shown in fig. 13. There are two plates held together by strong brass pillars; between these plates is a third having springs to hold the slide firmly.

In Messrs. Noakes' fronts this inner plate can be adjusted to hold a slide of any thickness, which is a great convenience.

All lanterns, however cheap, are fitted with a one-draw sliding tube, which is effective when used to about half its length, or about two inches, and the rackwork moving the front tube one inch, gives a range of three inches; this will permit either a lens of five or six inches focus to be used, but if a lens of longer focus be employed, another tube must be added; this creates a difficulty, especially when the lens is of large diameter, as its weight tends to depress it out of the direct line of the rays of light coming from the condenser.

With a single lantern this difficulty is easily overcome, as the weight can be propped up from the table or stand on which the lantern rests, but with a biennial or triple this cannot be so readily done, as we shall presently see. Ordinary Russian iron single lanterns are sold under a great variety of names by various dealers, but there does not seem to be much difference in them, except in their price. According to the catalogues the oil lamp in them is "nearly equal to the limelight" or may be compared to it.

The intending buyer may here be cautioned against the second-hand rubbish offered for sale by some dealers and others. Of course, it is possible to pick up a genuine bargain occasionally, but there are a few unscrupulous persons who get rid of their old stock and failures, at a profit, by offering them as second hand or slightly soiled. It is risky to buy lantern apparatus second-hand without taking the advice of an expert; even though it may be by a good

maker, or have been used by a noted lecturer. It will probably cost more to bring it up to date than it would to secure a modern pattern with all the latest improvements.

When dissolving views are required, two lanterns must be used, but many ingenious devices have been invented to secure a somewhat similar effect with a single lantern, and as some of these form part of the lantern itself, the two subjects, single lantern and carrier, may be considered together.

In all single lanterns the mechanical device for changing the slide should be as simple as possible, for if anything goes wrong with it, the whole show is stopped, which need not be the case when two lanterns are used.

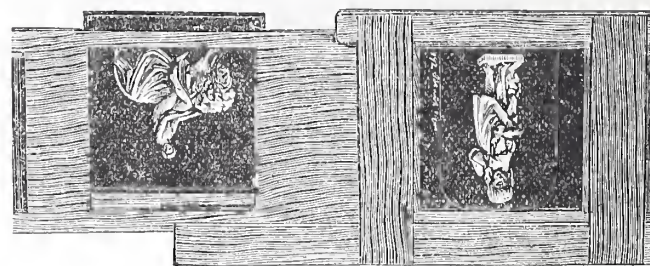


FIG. 14.

For a scientific lecture or an exhibition where the object is simply to show the slides, nothing is better than the double sliding carrier, which allows a slide to be changed while another is being exhibited. There was formerly one drawback to this—the difficulty of extracting the slide used. This is now overcome by making it rise out of the frame automatically (fig. 14). Messrs. Perken, Son, and Rayment have also an arrangement to secure the same end by a lever. Messrs. Archer, of Liverpool, have improved on this carrier by obscuring the rays with a semi-transparent material at the same time the slide is changed, by one lever.

Messrs. Steward's single dissolver is somewhat similar in effect, but three movements have to be made.

Mr. Hughes has three or four methods; in one there are two slide-carriers hung on a centre pivot, revolving like a wheel, the front being obscured by a shutter at the same time; in another, the sliding-carrier is used, and the front obscured by a mask with one motion; in another, the shutters to stop the light and prevent the changing being seen, are inside the double carrier.

With Mr. Beard's Eclipse carrier, the slide next to be shown passes in front of the one showing; the latter can be immediately withdrawn to the same side it was put in, the former being pressed into its place by a spring.

Mr. Pumphery's

Facile shows the pictures like a panorama, the movement being controlled by an endless band and steel spring; these cause the slide to move with great facility. Sometimes a single panoramic carrier is used, the length of three slides, so that the centre one can be adjusted in its proper place by the two outer ones; this would answer the purpose well if all slides were of the same thickness, but as they seldom are so, the thick ones stick fast, and the thin ones get in front of each other.

The shutters on lantern fronts should be fixed to them; if a loose cap is used, it is never to be found when wanted.

Messrs. Lancaster's shutter is an ingenious contrivance, by which all the picture is darkened at the same time, instead of a shadow appearing on one side, as with the ordinary sliding shutter; this makes it especially useful for dissolving.

(To be continued.)

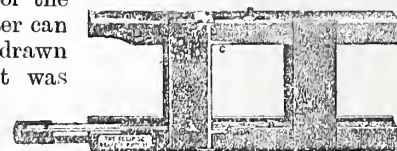


FIG. 15.

Exhibitions.

DEVONPORT CAMERA CLUB.

VERY gratifying success attended the first exhibition of this society opened at the Lecture Hall, Public Hall, in connection with the above club. It is a young society, and many of the members are young in years. There were shown about three hundred pictures, representing all kinds of photographic subjects, including figures, landscapes, seascapes, and interiors, and the success of the show is no doubt very largely due to the special exhibits of Mr. W. H. Tonkin. His pictures are full of artistic merit and excellent technical skill. Some of the sketches of cliff scenery are very fine indeed; his life studies are excellently posed and very natural. Amongst those claiming special mention is "Tol Pedn," well-known rocks at Land's End. His shipping studies are very good, and "Vessels coming into Harbour" make an exceptionally fine picture. There are also some excellent ship studies in still water; and a very striking picture of a group of geese is full of life and motion, with fine light and shade and half tone. A good example of old architecture is "Kergwin Arms," Mousehole; and "At Sonnen," a study of breaking waves, is the best example of that class of work. Among figure subjects, "At Porthgwarra," an old fisherman in a boat, is very faithful. Mr. J. B. Huddy, of Her Majesty's Dockyard, President of the club, sent in a considerable number of prints, amongst which, "Lydford Gorge," "The Orangery at Mount Edgcumbe," a series of views of Newquay, and Cotehele Woods attracted attention. Mr. W. T. Farrell showed some bromide prints and enlargements. "On the Okement," "Beech Avenue, Okehampton" and "Cottage at Denham Bridge" were especially worthy of notice. Mr. A. G. Hoyton, of Torpoint, exhibited some excellent 12 by 10 pictures in silver, "Interior of Merrifield Church" and "Group at Wilcove" being highly meritorious. Mr. Lethbridge's work was also very fine, and his collection was a large one, embracing views of some of the finest cliff scenery of Cornwall, views of Dartmoor, and some choice selections from views in the vicinity of the Valo of Lanherne; and Mr. J. F. Coombes showed a series of quarter-plate pictures, of which "Devonport Park," "Devonport, from the Column," and "Beechwood Cottage, Mount Edgcumbe" were choice representations. Several albums with a variety of views were contributed by Mr. J. B. Huddy and Mr. E. Aslat, some of the latter being from negatives taken in the earlier days of photography and comparing well with the work of to-day. Col. Stewart lent some albums showing views in Madagascar and the Mauritius, full of quality and power.

Mr. J. Crook attracted attention by an excellent print of "The Font, St. Michael's Church, Stoke," "The Bridge, Awns and Dendles," and a very pretty subject, "Bridge near Saltash Passage," with fine atmospheric effect. Rev. W. Mantle sent several portraits, very good for a comparatively new worker. Mr. J. F. Coombes was represented by considerable variety, his best pictures being "Beechwood Cottage, Mount Edgcumbe," "H.M.S. Liberty," "Denham Bridge," "Landulph Church," and "Devonport Park." Mr. W. Taylor showed some portraits and enlargements. Mr. C. H. Moore sent some "home portraits" and landscapes—in the latter doing some very good work, the most attractive being "Shaugh Mill," "Radford Boat House," "Huckworth Bridge," and "Radford Lake." Mr. H. Pike showed happy choice in his subjects, whether landscape or figure. A fine evening effect, "Clouds," deserved attention, and "The Avenue at Lamerton" was a very enjoyable picture. Mr. Spurrell's set of "Triumphal Arches" were excellent in technique and standpoint of view. Mr. R. Marshall contributed numerous and of good execution—portraits being worthy of notice, and the best of landscapes "East Looe," "Views in Kensington Gardens," and "Calstock." Mr. A. G. Hoyten's contributions were mostly 12 by 10 pictures, all of attractive quality, "A Bridal Party," "Interior of Merrifield Church," and "Regatta Scenes" being the best. Amongst the enlargements was a fine picture of the "Beating of the Devonport Borough Bounds," taken by Mr. Charles R. Rowe on that occasion, on a quarter-plate Fitch film and enlarged to 25 by 30, a copy of which has been presented to the borough by the Mayor. This example was kindly lent by Mr. E. A. Boulds. Mr. Rowe also showed some pretty quarter-plate examples, of which "Bickleigh Bridge," "West Lodge, Port Eliot," and "Lodge near Holne Chase" were noticeable for their picturesqueness and successful effort. The same exhibitor showed a full-plate group of Lord St. Levan

(Mayor of Devonport) and family, taken at St. Michael's Mount, as well as the Corporation group on the occasion of their visit to that place.

Mr. P. Gudridge had a capital lot of views from well-known beauty spots in the neighbourhood, all of them commanding attention.

The lantern slides by the members were a large lot and throughout were characterised by even merit. They were shown by Mr. E. J. Seymour and by Mr. J. F. Coombes, and the large number of persons present much enjoyed the exhibitions. The slides were contributed by Messrs. C. J. Harris, A. G. Hoyten, C. H. Moore, P. Gudridge, H. Pike, J. F. Coombes, and J. Crook.

Apparatus was sent by the President, Mr. J. B. Huddy, and Messrs. C. J. Harris, E. Aslat, H. Pike, and J. F. Coombe, the latter's contribution being large, and including a "Rover" and "Omnigraph," as well as other types of hand-cameras. The Photomnibus of Messrs. Wormald and Co. was on view, and several pinhole photographs of some merit showing the possibilities with such a camera.

Mr. E. J. Seymour's very fine triple lantern attracted a deal of attention, as well as his single optical lantern of the latest pattern, by which the lantern slides were shown.

Colonel R. W. Stewart, commanding Royal Engineers, opened the exhibition with a few happy remarks upon photography and its closeness of touch with all that was educational, kindly sent a series of magnificent platinotypes of Westminster Cathedral, printed direct, and these commanded universal attention, the work being of the highest class, and the subjects admirably chosen.

The Club's first effort has been of use to the amateurs of the neighbourhood and has resulted in an accession of members.

Reviews.

The Optical Lantern for Instruction and Amusement. By Andrew Pringle, F.R.M.S. Published by Hampton Judd and Co., 17, Farringdon Street, E.C. Price 2s. 6d.

This book, which was originally written for the American market, has now appeared as an English work, and will be found, we need not say, of value to the lantern operator, as it forms a handbook to the use of the lantern, and it cannot be denied that it is written by a practical man; but it is only a handbook to the lantern, and does not treat of lantern-slide making. The book is well printed, and contains numerous illustrative diagrams.

Die Praxis der Moment-Photographie. By L. David and Chas. Scolik. Published by Wilhelm Knapp, Halle-a-S. Price 16s.

This work, which forms the third volume of David and Scolik's comprehensive book on photography, will form a useful companion to the man who is desirous of following up the study of instantaneous photography in all its branches; it is very complete, and very fully illustrated, and forms a complete encyclopedia of the various parts of the apparatus necessary for practical work. Although recalling in many features the work of Dr Eder on the same subject, it cannot be denied that it is also different. The publisher is to be congratulated on having done his part so well.

The Photographic Review of Reviews. Edited by W. D. Welford. Published by Iliffe and Son, 3, St. Bride St., London, E.C. Price 6d.

It is quite possible that a boiling down of the month's photographic papers into one magazine may be useful to the man who has but little time to spare, if it is done well, but it remains to be seen whether the new venture will succeed. There is plenty of room in the world for all. We are glad to note that personalities will be strictly avoided. An illustration by a process block forms the *chef-d'œuvre*, and there are several small blocks in the letter-press. The magazine is well printed and on good paper, but we note one or two errors.

Loeber Bros., 111, Nassau Street, New York, have sent us a very complete illustrated catalogue of their photographic goods, and the further usefulness of the same is enhanced by plain and brief directions for working plates, etc.

Camera Club.—In consequence of Mr. Willis's absence abroad, his paper already announced for February 4th at the Camera Club is postponed, and the evening will be devoted to "A New Enlarging Lantern" and demonstration by Mr. S. Herbert Fry.

The Actinograph.

BY F. HURTER, PH.D., AND V. C. DRIFFIELD.

ABOUT fifteen years ago we decided to start together with what knowledge of photography we individually possessed, and do what we could to improve its position from a scientific point of view. From the first, we were strongly impressed with the idea that all photographic operations are strictly amenable to scientific treatment. The art aspect of photography we left to others better able to deal with it.

The first necessity we felt to be a means of accurately measuring the light, in order to be able to determine our exposures with something like certainty, and we devoted a considerable time to the discovery of a really satisfactory actinometer. The invention of what we believe to be the only instrument capable of measuring diffused daylight, was the ultimate result of this enquiry and, for some years, we used this actinometer for estimating our exposures. On account, however, of the difficulty of making and transporting this instrument, and on account of its fragility, it never became a marketable commodity.

After some time we constructed these actinometers in such a way as to be self-recording, and, by means of them, we took daily diagrams of the light for more than a year. As was to be expected, we learnt a great many lessons from these diagrams, and one was that they clearly indicated that the light was a function of the altitude of the sun. We also learnt that though, due to atmospheric influence, the light fluctuates considerably, these fluctuations are limited deviations from a certain mean value, which itself varies with the altitude of the sun. The mean value of the light, therefore, at any day and hour, merely became a matter of calculation, and the diagrams helped us directly as to the extent of the fluctuations from that mean value. They also helped us to the value of twilight.

From these remarks it will be seen that Mr. Wall's criticism of our actinograph, which recently appeared in his "Photographic Procedure," was based upon a statement diametrically opposed to fact. Mr. Wall rightly contends that because the light upon any given day and hour of a certain year is ascertained, it is no criterion as to the amount of light on the corresponding day and hour of any other year. It will now, however, be seen that the curves of our light scale are *not* the "results of observation," but that they are strictly "founded on calculation."

Now, when using our actinometer we sometimes found that it misled us, owing to its inability to follow sufficiently rapidly the fluctuations in the light; for it must be understood that our actinometer records the light just as a thermometer does the heat, and we all know that a thermometer does not follow changes in the temperature as rapidly as they may take place.

These considerations led us to this conclusion, that an actinometer was not at all requisite for the estimation of photographic exposures, and that we should probably be much more successful if we trusted entirely to calculation. This conclusion has subsequently been amply borne out in practice.

Our next step was to substitute for the actinometer the necessary data, in a handy and convenient form, for the calculation of exposures under the varying conditions of light, lens, and speed of plate. This had been previously attempted by means of exposure tables, but these involved so many calculations and considerations at the moment of making the exposure and were so inconvenient to use, that we determined to invent an instrument in which calculations should be altogether avoided, or, at any rate, reduced

to a minimum, and which should be founded upon clearly defined units of light and speed of plate. The outcome of this was the invention of the actinograph, which instrument we will now proceed to explain.

The actinograph is in reality a little calculating machine. It consists of a small box of such size as to admit of being conveniently carried in the pocket, and contains four logarithmic scales, suitably mounted, which refer respectively to the light, the lens, the speed of the plate, and the exposure.

The *light scale* consists of a number of curves, and is, for convenience, mounted on a revolving cylinder so that it can be readily adjusted to the day on which the exposure has to be ascertained. These curves give the mean light for any morning and corresponding afternoon hour throughout the year when the light is photographically active. We take as our unit of light the 1-100th part of the brightest possible diffused daylight when the altitude of the sun is 90 deg. The light scale of any particular actinograph is, of course, strictly accurate only for the particular latitude for which it is calculated; in practice, however, it serves for a considerable zone. Special instruments are made with light scales calculated for any desired latitude, so that the photographer may expose his plates abroad with the same certainty with which he can at home.

The *lens scale* gives the ratios of apertures to focal length from $f/2.8$ to $f/64$, both in accordance with the decimal system, and with that advocated by the Photographic Society of Great Britain. This scale also takes into consideration the distinction between single lenses, doublets, and triple combination.

The *Speed Scale*.—The speed of plates as marked on this scale has no relation to the arbitrary and unreliable speeds generally spoken of, but is based upon scientific principles and upon clearly defined units. We define the speed of a plate as that exposure, expressed in seconds, which, with our actinograph degree of light, will produce a theoretically perfect negative of an "ordinary" landscape; the light reaching the plate being equal to that reflected by the object. An "ordinary" landscape we define as one in which there is no dark or massive object in the immediate foreground.

Perhaps one of the greatest existing needs of the photographer is some method of accurately ascertaining and comparing the relative speeds of plates. No method of doing this has hitherto been found, but we venture to regard our discovery of such a method as one of the most important results to which our investigations have led. We are glad to be able to add that a leading firm of dry plate manufacturers have recognised the theoretical accuracy and the practical utility of this method of speed determination, and are now issuing their plates marked in accordance with our system. If, therefore, the photographer is provided with plates so marked, and with the actinograph, he is in a position to time his exposures with a degree of accuracy almost amounting to certainty. But, apart from the actinograph altogether, it will be found a great boon that plates of different rapidity bear numbers which are strictly proportional to their speed. If, for example, a photographer has worked successfully with plates of which the actinograph speed was 10, and the next packet of plates he procures is marked 20, he will at once know that the latter require just half the exposure of the former, because they are twice as rapid.

The *exposure scale* is simply marked with a range of exposures varying from 0.05 sec. to 1 min. The photographer has, of course, frequently to deal with exposures which exceed these limits. In such cases he either multiplies or divides his indicated exposure by a certain

factor, or what is the same thing, he assumes the speed of his plate to be less or greater in the same proportion.

Sliding between the exposure and speed scales is a smaller scale. Upon the upper edge of this scale are five points indicating simultaneously five different times of exposure. The five points are marked "very bright," "bright," "mean," "dull," and "very dull," and the exposure must be selected opposite that point which most nearly corresponds with the atmospheric conditions at the time of making it. The selection of the right point to use presents no difficulty if our definition of a "mean" light be borne in mind. A "mean" light is indicated when there is just sufficient sun to cast a very faint shadow. We found from the diagrams taken by means of our actinometer that the fluctuations in the light, due to different atmospheric conditions, are such that the highest light is never more than double, and the lowest serviceable light is seldom less than half the "mean" value indicated by the actinograph for any given time.

(To be continued.)

Apparatus.

NOBLE'S GELATINE LANTERN SLIDES.

MR. JOHN J. NOBLE, of 169a, Hyde Park Road, Leeds, has forwarded a specimen of his new slides, which are printed direct from first-class electros and type. On trying them in the lantern we were surprised to see how clear and brilliant the picture was on the screen, and if one missed the photographic detail, the artistic was certainly more prominent. The slides are light, unbreakable, and thoroughly transparent, and show well on the screen.

A special feature which Mr. Noble has introduced is plain gelatine, already bound and mounted, which one can utilise for writing on, for preparing diagrams, etc., whilst lecturing. These plain gelatines should be of enormous advantage to photographic lecturers, and entirely supersede the blackboard and the chalk that will break.

Societies' Meetings.

Ashton-under-Lyne.—A meeting was held on the 20th inst., the Rev. H. J. Palmer presiding, and before a large number of members and friends, including many ladies. The evening was devoted to a lecture by Dr. A. Hamilton (President) and Mr. Charles Lord, on "A Tour in Switzerland," illustrated by a large number of very excellent lantern slides. The description of each slide was both interesting and instructive. Some very beautiful pictures of snow and ice were shown, some of which the two gentlemen must have gone to considerable inconvenience to photograph. Mr. R. S. Marsland worked the lantern.

Barrow-in-Furness.—A meeting of the photographic section of the Naturalist Field Club was held on the 21st inst. This was a lantern night for slides made by members. Mr. A. Bletchynden, the Chairman of the section, presided. One hundred and twenty-eight slides were shown on the screen by Mr. W. Dunlop with his new limelight lantern, which was ably manipulated. The greater part of the slides were made on Alpha and Thomas' plates, and some very fine slides were shown by the following members: Messrs. Dunlop, Hartley, Timms, Jochumsen, and Redhead. The attendance of members was below the average, probably caused by the unfavourable weather. At the conclusion of the show, two new members were admitted.

Bristol.—At the meeting on the 22nd inst., after the routine business, the set of lantern slides, "Boston Illustrated," sent over by the American Photographic Society, were exhibited by Mr. Dunscombe with a limelight lantern. They were described by Mr. Genge. A resolution was carried that the members prepare a set of slides illustrating Bristol, for loan to the American societies.

Brixton and Clapham.—An ordinary meeting was held on 21st inst., Dr. J. Reynolds in the chair. The subject for the evening was "Printing Processes," to which two excellent papers were contributed by Mr. F. Goldby and the Hon. Secretary (F. W. Levett) on the "plain salted" and "carbon" methods respectively. Mr. Goldby, whose paper was read in his absence by the Hon. Secretary, dwelt chiefly on the ease with which the salted paper could be worked, giving formulæ for sensitising and toning, and saying that with care

the results that could be obtained were very little inferior to platinotype; and he handed round several prints to support his view, and they were certainly all he claimed for them. Subsequently to this, the Hon. Secretary gave a most interesting demonstration upon carbon printing, producing several prints to show the various colours that could be obtained with the different tissues. He then proceeded to develop some prints that had been kindly sent down by the Autotype Co. Many of the members were surprised at the ease with which the pictures could be produced, and said that they should take an early opportunity of trying it. Several sample packets of Eastman bromide paper were handed round amongst the members, who promised to produce the results at the next meeting. Mr. Burrow, one of the members, showed a large number of photographs of the recent earthquakes in Japan, which attracted much attention. Messrs. Vallentine and Archer were elected members of the club.

Camera Club.—On Thursday, January 21st, Mr. Alfred Maskell read a paper on "Photography and Arrested Motion." Mr. F. Machell Smith occupied the chair. The lecturer assailed the results of a large proportion of the instantaneous photography practised as giving only inanimate pictures, and incited to the use of methods and treatment which would better suggest a sense or idea of action and motion. A large number of illustrations was given, and the lecture excited a discussion, in which the Rev. F. C. Lambert, Messrs. Humphery, Fison, Patterson, Harrison, Davison, Davies, and the Chairman took part.

Cardiff.—At the weekly meeting of the photographic society held on the 22nd inst., the President, Mr. C. F. Gooch, in the chair, the members were favoured with a display of prize lantern slides, numbering some 140, comprising portraiture, landscape, genre, animal and flower studies, street scenes, etc.

Croydon.—January 18th was a lantern night for members' slides; nearly two hundred photographs, the work of Messrs. White, Holland, Hirst, and Isaacs, were projected on to the screen. The annual meeting is fixed for 1st prox., when all members are requested to attend.

Devonport.—The R.N.E. College Camera Club held the first annual meeting on the 22nd inst. Nearly all members and a few friends were present. The President (Mr. R. G. L. Markham) gave a review of the Club's doings during the first year of its existence, and encouraged members to be ever seeking progress in their art. He then dissolved the executive. The following committee was then elected: R. G. L. Markham, R. W. Skelton, H. M. Wall, and W. B. Hall; with W. S. Hill as President, and J. S. Constable as Hon. Secretary. Suggestions for the next session were then discussed, and the standing rules read and discussed, but, owing to lack of time, resolutions as to alterations, etc., had to be postponed.

East London.—General meeting held on the 19th inst., Mr. E. M. Minns in the chair. The following gentlemen were elected: Messrs. H. C. Gould, A. P. Barnard, Barnard, jun., Newton, Crisp, H. Maurice Williams, Jones, Baker, Wraith, Bavingstock, Tylee, and Page. Owing to the increase of members, the room in Norton Folgate, E.C., has had to be dispensed with. Headquarters in future, Town Hall, Shoreditch, E.C.; meeting nights, second and fourth Tuesday in the month at 8.30 p.m.

Faversham.—A meeting was held on the 19th inst., when Mr. Cremer was booked for a demonstration on "Enlarging," so the members, instead of meeting at the Institute, assembled by invitation at his residence. The routine business over, an adjournment was made to the dark regions, and several exposures were made by means of artificial light, the pictures being afterwards successfully developed. Dr. Evers also produced his enlarging camera, adapted for enlarging by means of solar light, and explained its manipulation.

Glasgow and W. of Scotland.—The annual general meeting was held on 20th inst. Mr. John Morrison, jun., occupied the chair until the election of Mr. Thomas Taylor, as President. The Secretary read the Council's report for the past year, wherein it was stated that forty-four new members had joined the Association during the year, and that now the membership was 212. The Treasurer's financial statement showed that after providing for all debts there was a substantial balance at the credit of the Association. The members of Council for the current year having been elected, there was a discussion on the new "Rodinal" developer, followed by the usual show of lantern slides, which brought the proceedings to a close.

Glasgow.—The second popular meeting of the session was held on the 21st inst., Mr. J. Craig Annan, Vice-President, in the chair. The President, Mr. Wm. Lang, jun., F.C.S., delivered a lecture on "The South End of Arran." The lecturer gave the early history of this portion of the island, and showed by means of the lime-light a large number of views. The following is a synopsis of the lecture: "Early history and writers—Monro, Martin, Pennant, and Headrick. Druidical remains—Brodick, Brodick Fair, Lamlash, Holy Isle, and St. Molios, King's Cross. Bruce and Arran—Whiting Bay, Glen Ashdale, Dippin Point, Ailsa, Kildonan Castle, Signal Station, Pladda, and Benan Head."

Holmfirth.—On the 22nd inst., at the usual monthly meeting, the AMATEUR PHOTOGRAPHER 1891 Prize Slides were put through the lantern. A most enjoyable evening was spent.

Kendal.—The monthly meeting was held on the 20th inst., Mr. Isaac Braithwaite presiding. A number of specimen packets of bromide paper, etc., kindly sent by the Eastman Company, were distributed among the members present. A specimen print of the new sepia tone was exhibited. The business of the evening consisted of a paper on "Odds and Ends of Photographic Apparatus," by Mr. John Armistead, of Dalton-in-Furness, who also showed a large number of photographic novelties made principally by himself. Mr. Armistead being both an amateur joiner and photographer of no mean merit and very enthusiastic withal, his paper and examples excited great attention and interest.

Leigh.—The opening meeting was held on the 21st inst. There was a good attendance. The President, Mr. J. H. Stephen, had promised an address on "Lenses," but through illness could not attend. Mr. J. Ward, the Vice-President, presided, and gave a very appropriate address. Rev. H. Morrison and Mr. T. L. Syms, of Tyldesley, were added to the committee. Mr. Crouchley will give a paper on "Lantern Slides" at the next meeting, February 4th, and Mr. Drabble will exhibit his limelight apparatus.

Lewes.—A meeting was held on the 19th inst., when several slides by Messrs. Braden, Bedford, Constable, Currey, Morris, Wightman, and Turner were passed through the lantern. The subject of the next quarterly competition, "Leafless Trees," was announced by the Hon. Secretary.

Liverpool Camera Club.—The first exhibition of competition photographs, lantern-slides, and members' work of this club was held on the 20th inst., in conjunction with an "At Home" given by the President, Dr. Cecil F. Webb. Mr. W. Tomkinson, President, and Mr. F. Anyon, on the Council of the Liverpool Amateur Photographic Society, kindly undertook the judging, and made known their awards during the evening, as follows, viz.: *Club Prizes:* Class 1—Six landscapes; prize, silver medal, to "Bulc Aremac," Mr. J. Smith. Class 2—Six marine and cloud effects; prize, silver medal; no award; only one competitor. Class 3—Three portraits, untouched; prize, silver medal, to "Rodi," Mr. W. Tansley, the Hon. Secretary. *Special Prizes:* Class 4—Six hand-camera pictures; prize, Wood's washer, to "September," Mr. W. A. Brown. Class 5—Six pictures taken during the club outings; prize, a Thornton-Pickard time and instantaneous shutter, to "Globe," Mr. W. H. Glassey. Class 6—Six lantern slides; prizes, 1st, Griffith's reducing camera, to "Umbra," Dr. Webb, the President; 2nd, Eclipse lamp, to "McGinty," Mr. W. A. Brown. The slides were passed through an Archer and Sons' Ideal lantern, by Mr. Anyon, who described the various beauties and defects of each slide. The prize slides were greatly admired, and one of the President's hand-camera shots, "The Jubilee Fountain at Llandudno," received especial commendation. The competitions for the several classes were only few, as the bulk of the members being beginners were a little too modest to compete, but the work was on the whole creditable for such a young society, it having only been established last March. At intervals Mr. G. Mundell's string band played a selection of favourite airs and marches. Miss Webb and Mr. J. Smith gave a piano and mandolin duet, which, together with the humorous songs of Mr. F. D. Williams, and the singing of Miss Smith and Mr. R. Stilt, greatly contributed to the evening's enjoyment of a numerous assembly of members and friends. The firms of Messrs. Wood Bros., Archer and Sons, Sharp and Hitchmough, and Mr. F. Lloyd most obligingly sent a great variety of photographic novelties, cameras, lanterns, and slides, and these were exhibited on the tables and much noticed. In connection with the ball to be held on the 8th of February next, Mr. J. Smith had made a lantern slide of a "Bill," and another of a "First Time of Asking to Attend," and these were thrown upon the screen.

Liverpool Y.M.C.A.—On the 20th inst. Mr. R. S. Archer gave his lecture, entitled "Edinburgh and its Monuments," illustrated with views taken by himself during a visit last summer. Mr. J. C. Lee manipulated the lantern. The lecturer being a native of Edinburgh was enabled to make the lecture intensely interesting by the detailed description he gave of every picture as it was thrown on the screen.

Newcastle.—The annual meeting was held on 19th inst. The President, Mr. A. S. Stevenson, was in the chair, and there was a good attendance of members. Four new members were elected. Mr. G. L. Snowball had given notice of a motion having for its object the acquisition of a dark-room and a meeting room, but was unable, by reason of illness, to be present. The President submitted the motion in his stead. It would be an immense advantage, he said, if there was a dark-room to which their members could have easy access in some central place in Newcastle. It was also a question whether it would not be well if in some place they could have a room which might be useful for lantern demonstrations, and for a general meeting room, in which they might have photographic papers regularly on view. He moved that a Committee be appointed to consider and report upon the scheme. Mr. J. Brown seconded the

motion, which was unanimously agreed to. The Chairman suggested that the scheme should be in the direction of having a club room, which should be a home for the Association. A Committee of five was appointed accordingly. Mr. James Brown demonstrated and read a paper on "Platinum Toning as applied to Gelatino-chloride Paper." The officers for the ensuing year were elected as follows:—President, Mr. A. S. Stevenson; Vice-Presidents, Mr. J. P. Gibson and Mr. H. G. Ridgway; Treasurer, Mr. J. W. Robson; and Secretary, Mr. Edgar G. Lee.

North Middlesex.—An exhibition of members' lantern-slides was given on the 25th inst. A large and varied collection of slides, amongst which were many very charming pictures, were shown by Messrs. Ainsley, Cherry, Gill, Gregory, Johnson, Jones, Marchant, Mummery, Plunket, Smith, Taylor, Treadway, Wall, and Walker. In the absence of the President by reason of ill-health, the chair was taken by Mr. H. Walker. The audience was considerably smaller than usual, not many more than one hundred being present, the small attendance being probably due to influenza, which is raging in the neighbourhood. The display of lantern-slides was varied by pianoforte selections given by members and friends of the society. Two gentlemen were nominated for election as members at the next meeting, which will be a technical evening, to be held on February 8th, when visitors are invited.

Plymouth.—The Graphic society held its eighth annual meeting on the 18th inst. The Secretary reported that 82 persons had been enrolled as members, and of these during the past year ten had resigned and thirteen had been elected; ten indoor and eleven outdoor meetings had been held; the annual excursion had been at Berry Pomeroy Castle, and was well attended. The Treasurer's report showed a favourable balance. The balloting for the Council of Management resulted in the election of Mr. S. Kerswill as Chairman, Mr. Watson as Treasurer, Mr. Hawker as Secretary, and Mrs. Allen, Mr. Foster, Miss Steele, and Mr. Micklewood as members of the Council. A programme of lectures, etc., for the remainder of the winter session was agreed on. These will be given fortnightly until the middle of May, when outdoor meetings will be resumed. Great regret was expressed at the loss the society had sustained by the removal of Mr. R. Murray, the late Chairman, from the neighbourhood. An exhibition of members' work, and a Graphic tea is to be held on February 29th.

Pudsey.—At a meeting held on the 21st inst., a paper was read by Mr. J. Barrow on "Stereoscopic Photography." Considerable interest was shown in the pictures exhibited, and a warm discussion followed the reading of the paper. Four new members were admitted. The officers elected for the ensuing year are:—President, Dr. Hunter; Vice-Presidents, Mr. J. Barrow and Mr. H. Crossley; Treasurer, Mr. J. Goodman; Secretary, Mr. W. H. Hinings. The result of the first competition held in connection with the Society—subject, "A Local Landscape"—has just been made known, and Mr. Thompson Marshall has taken first prize and Mr. W. H. Hinings the second.

Rochdale and District.—The first exhibition of this society was opened on the 21st inst., and will remain open until January 30th. There is a numerous collection of pictures, embracing enlargements in bromide; prints in ferro-prussiate, bromide, aristotype, silver; and transparencies. Amongst the enlargements are "Loch Katrine and the Trossachs," by T. H. C. Mackenzie; "Simpson Clough," Mr. T. Leach; "Jersey," Mr. H. Fletcher. Also coloured enlargements: "Cragg Vale," by Mr. R. M. Jones. Mr. Samuel Ingham (one of the secretaries) is well represented by a dozen half-plate bromide prints, including prize cattle, snow scenes, and several old buildings and interiors. Mr. William Ingham (the other secretary), has a good display, in bromide and aristotype, of landscape work. Mr. T. P. Spedding has secured some capital bits of Warwick. Mr. J. H. Hoyle has several whole-plate prints, which show clever work, notably an interior of Milnrow Church. E. H. Aldridge has three frames of hand-camera prints of shipping, etc. Amongst the other exhibits special mention should be made of Messrs. Trelfall, Blomley, and Bamford. Two frames of transparencies on Alpha plates are shown by Messrs. Ingham and Hoyle. Lantern exhibitions are given each evening from members' slides, Mr. Harry Fletcher having charge of the lantern. Mr. J. H. Crabtree shows an excellent set of "A Tour in Wales" "Rochdale and District," by Messrs. William Ingham, Greenwood, Spedding, and Jones; and a capital set of "Forth Bridge," by H. Fletcher. A very large collection of oil and water-colour paintings has also been contributed by members of the art society, which together makes a most creditable exhibition and well worthy of a visit.

South London.—A successful entertainment was held in connection with the above society on the evening of the 18th inst. The principal feature of the programme was an exhibition of dioramic effects in the triple oxy-hydrogen lantern, given by Messrs. Banks and Greaves, consisting of statuary, views, etc., which showed exceedingly clever manipulation of the lantern, and included the fountains and illuminations at the Inventions Exhibition, the

Castle of St. Angelo, Rome, and Milan Cathedral by day and night, and last, but certainly not least, the progress of a memorable fire in Cheapside, which was received with loud applause. The last was a very interesting specimen of the photographic art, and one of the best in Mr. Banks' numerous collection. During the evening a selection of vocal and instrumental music was given. Miss Ella Thomson gained two well deserved encores for her rendering of "By the River" and "The Flight of Ages;" and Mr. Banks contributed "Going to Market" and "The Song that Reached my Heart" in a pleasing manner. Mr. P. Williams was very successful in "My Lady's Bower" and "Last Night," and amongst others who assisted were Mr. H. B. Lyon (cornet), "Maritana;" W. A. Hill (flute), "Tell me, my Heart;" W. Lee, "The Postillion;" and W. Rice, "Out on the Deep." The duties of accompanist were performed by Mr. Louis Devaux in an able manner. An exhibition of microscopic objects by members of the South London Microscopical and Natural History Club was much appreciated.

Spen Valley.—Dr. Farrow (President) presided over the January meeting of this society, and read a paper on "Practical Photography," in which he gave many useful suggestions for making up solutions, and much information in photographic dispensing. A number of tried and reliable formulæ were also given. One new member was admitted, and the formal business of the society transacted.

Sydenham.—A meeting was held on the 19th inst., the President in the chair. The President read a paper on Ilford printing-out paper, which proved very interesting. Some very good work done on this paper was exhibited by various members. The following officers were elected for the ensuing year: Mr. T. C. Cole, President; Mr. G. Austin, Vice-President; the Council, Messrs. Barlow, Chapman, Rumble, and Zimmer; and Hon. Treasurer and Hon. Secretary, Mr. H. H. Gray.

Tyneside.—The usual meeting was held on 19th inst., the President (J. F. McKie, Esq.) in the chair. The President gave a very interesting and able lecture on "Enlarging, Copying, and Reducing, and the Apparatus for so Doing." He drew the attention of the members to Messrs. Griffiths' apparatus, which did all an amateur required. He also showed the different copying apparatus, for preventing the grain of the paper showing in the negative, how the light is regulated by reflectors. The lecture was rendered very clear by diagrams.

West London.—An ordinary meeting was held on the 22nd inst., Mr. C. Bilton in the chair. Six new members, including one lady, were proposed for election at the next meeting. Mr. J. D. England read a paper on "Celluloid Films." He described celluloid and explained its manufacture, showing samples of clear and matt celluloid, such as is used in the manufacture of negative films, and also a specimen of ivoryne. He explained the advantages of celluloid over glass for negatives, and exhibited carriers for holding the films in the dark slide, and a changing box for twelve films. The lecturer then explained the necessary steps to be taken in developing, fixing, washing, drying, intensifying, reducing, and also gave several formulæ for varnishes. He concluded by showing several negatives and two exquisite stereoscopic positives, all taken on celluloid films. The paper was followed by a very interesting discussion, in which most of the members present took part. A vote of thanks to Mr. England brought the proceedings to a close.

Phot. Soc. of Great Britain.—On Tuesday, February 2nd, Professor R. Meldola, F.R.S., will deliver a lecture at 50, Great Russell Street, W.C., on "Photography as a Branch of Technology." Tickets can be obtained on application to the Assistant Secretary.

Geo. Houghton and Son, of 89, High Holborn, so well noted for their dark-rooms and dark-room fittings, have sent us a new catalogue of their specialities and general stock, from which it appears that they keep a full line of all photographic sundries.

Walter Griffiths and Co. have written to correct the impression which might be conveyed by our note of last week, and we are pleased to state that in the new premises they will stock a full line of all chemicals, apparatus and sundries, and not, as might be inferred, their own goods only; and Messrs. Griffiths say, "Our special endeavour will be to make our photographic store as general and as cosmopolitan as possible."

Maddox Fund.—Further list of subscriptions: George Mason £2 2s.; John Spencer, £2 2s.; F. H. Verel and Co., £3 3s.; Albion Albumenising Company, £2 2s.; Annan and Son, £1 1s.; William Lang, jun., £1 1s.; Sir H. Treman Wood, £1 1s.; R. W. T., £2 1s.; P. Lange, £2; A. W. Chapman, £3; T. C. Hepworth, £1 1s.; W. I. Chadwick, £1 1s.; London and Provincial Photographic Association, £2 14s. 6d.; L. E. Clifts, £1 1s.; C. G., £1 1s.; Spen Valley Photographic Society, £3 10s.; Professor Stebbing, £1; Thomas Curties £1; *Photographic Review of Reviews*, £2 2s.; G. H. Rodwell, £2 2s.; Jeffs and Sons, £1 14s.

SOCIETIES' FIXTURES.

- Jan. 28.—CAMERA CLUB.—"Lantern Evening," slides by Lt.-Col. Gale.
 " 28.—LIVERPOOL AM. PHOT. SOC.—Presidential Address; "Lenses," by T. S. Taylor.
 " 29.—PUTNEY.—"Manipulation of the Optical Lantern," by the President.
 " 30.—PUTNEY.—"Hand Cameras," by A. R. Dresser.
 Feb. 1.—CROYDON.—Annual; "Holidays with Camera" Prize Pictures.
 " 1.—PLYMOUTH GRAPHIC.—"Italian Art," Mr. Kerswell.
 " 1.—CAMERA CLUB.—Smoking Concert.
 " 1.—SOUTH LONDON.—"Chemistry of Photography," by M. Howell.
 " 2.—LEWES.—"Platinum and Bromide Printing," by G. J. Wightman.
 " 2.—PHOT. SOC. OF GREAT BRITAIN.—"Photography as a Branch of Technology," by Prof. Meldola.
 " 3.—DARLINGTON.—Judging Competition.
 " 4.—CAMERA CLUB.—"Further Improvements in Platinotype Printing," by W. Willis.
 " 4.—BRIXTON AND CLAPHAM.—Lecture by A. Pringle.
 " 5.—LEWISHAM.—Lecture by J. Traill Taylor.
 " 5.—RICHMOND.—Lantern Night.

Davenport and Co., of 32, Parkhouse Street, Southampton Street, Camberwell, have sent us a very complete catalogue of dark-rooms and accessories, which are well worth the attention of our readers fitting up dark-rooms or thinking of making any changes. Their Eveready Dark-room has had a large sale, and is convenient and well made.

The Thornton-Pickard Manufacturing Company, of St. Mary's Street, Deansgate, Manchester, have recently issued a new edition of their price list, a copy of which now lies before us. One of their latest novelties is the Safety snap-shot shutter which automatically covers the lens whilst the blind is set for exposure.

Phot. Soc. of Ireland.—A special meeting of the Council of this Society was held on the 19th inst., at which the following vote of condolence on the sad death of the Duke of Clarence was passed, and forwarded, "The President, Vice-President, and the Council of the Photographic Society of Ireland, having learned of the lamentable death of H.R.H. the Duke of Clarence and Avondale, desire to convey their sincere and heartfelt sympathy to Her Majesty the Queen, the Prince and Princess of Wales, and the Princess May, in their deep bereavement." On Thursday an ordinary meeting was held, at which a set of American slides was passed through the lantern. The slides were excellent, both for choice of subject and in technique, and were much appreciated by the members. Slides were also shown by Mr. J. J. Dowling.

Turner v. Elliott.—The case of Turner v. Elliott, which is of some interest to photographers, was before Mr. Justice Romer in the Chancery Division of the High Court of Justice on Monday last. This action, a report of which appeared in the AMATEUR PHOTOGRAPHER in May, 1891, was brought by the plaintiff for an injunction to restrain the defendant, a large photographic material manufacturer carrying on business at Barnet, from allowing gases and odours arising from the albumenised paper used in the business, to issue from his premises in such a way as to cause a nuisance to the plaintiffs. When the matter was last before the Court, owing to the conflict of the evidence, his lordship suggested that an expert should be sent to determine the real state of affairs. This course was adopted, and Mr. Meldola examined the defendant's manufactory on several occasions. His report was now laid before the Court, and he said that when the wind was in a certain quarter the smell of the albumenised paper from the printing and sensitising rooms was sufficient to cause a nuisance to the plaintiffs. The other matters complained of were not calculated to cause a nuisance. His lordship, in giving judgment, said that in this case it was not necessary to give an elaborate judgment. The plaintiffs complained of vapours, gases, smoke, and offensive smells coming from the defendant's premises as causing a nuisance. An expert had been sent, and he stated that when the wind blew from a certain quarter, an odour could be smelt on the plaintiffs' premises. In respect of this smell, he (his lordship) thought the plaintiffs were entitled to an injunction; beyond that the plaintiffs had not made out their case. The injunction would be to restrain the defendant from allowing any vapours or offensive smells to escape from his building so as to cause a nuisance to the plaintiffs. With regard to the costs of this action, his lordship ordered the defendant to pay half of the plaintiffs' costs, and the operation of the injunction would be suspended for a month to allow the defendants time to rectify the matters complained of.

To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

QUERIES.

5398. **Hand-Camera Finders.**—I have made a hand-camera and want to fix two finders to it. How are they made so as to show the same picture as the lens?—**EGORUS.**

5399. **Haslemere, Surrey.**—I should be much obliged if any one could give information as to whether plates, etc., can be obtained at Haslemere, in Surrey, and whether any one would lend a dark-room for a few times in the second and third week in February.—**M. Smith, Hampermill, Watford.**

5400. **Enlarging.**—Will any one tell me if I can enlarge photographs with an ordinary magic lantern? Takes a 3 in. slide, has a single 1 in. wick-lamp, and cost 10s. 6d. If so, what exposure would be given on Ilford rapid bromide paper?—**S. H. HOLLOWAY.**

5401. **Halation.**—Mr. T. C. Hepworth, in his "Evening Work," p. 28, states that he has found negatives taken on plates ground on their back surfaces, to be perfectly free from halation. Would any of your readers give their experiences with these plates, and also state where they are to be procured? I should also be glad to know whether the grain of the ground surface above referred to would, owing to its proximity to the film, spoil the negative for enlarging purposes by showing itself on the enlargement. I have tried various backings with a view to curing this troublesome defect of halation, so far without complete success. They mitigate the evil, but do not perfectly cure it. Rubbing with a rag moistened with alcohol seems also only a partial remedy. Most negatives taken on plates (as apart from films) seem to show this defect more or less, if it is a subject in which halation can possibly occur, such as church interiors, objects against sky, and so on, and probably all plates would be the better for being secured against the effects of halation. How is this desirable result to be accomplished?—**H. E. H.**

5402. **Crystoleum Glasses.**—Can any one kindly tell me where I can obtain above (c. d. v. size), as several firms have discontinued supplying them owing to scarcity of demand? Am most anxious to get some.—**H. D. F.**

5403. **Paper Negatives.**—Can any one give me the name and address of good gelatin-bromide paper for negatives, to be obtained in spools for a roll-holder? I do not like transparent film for many reasons, and find it difficult to get the negative paper, as Eastman does not make it any more.—**KI-NON.**

5404. **Ceramics.**—Can you, or any of the readers of this paper, inform me where I can procure porcelain tablets and glaze for making photographic enamels (by burning)?—**G. K.**

5405. **Kallitope No. 2.**—I have followed the instructions given, but cannot get rid of yellow tint. Will any reader kindly help me?—**BORAX.**

5406. **Ilford Printing-out Paper.**—I have tried some of this in borax bath, same as I have always used for Liesegang's aristotype, but it tones black and whites are discoloured. Is the bath too strong, or what is the cause?—**BORAX.**

5407. **Making Washer.**—Can any of your readers give instructions for making a washer for quarter and half size plates and prints, or tell me where I can find such instructions?—**STANLEY.**

5408. **Mount Cutting.**—I do a lot of picture framing, but cannot cut my own mounts. Will any one say what tackle I shall require and where to get it? Also if there is any publication to be bought dealing with picture framing.—**CHIST.**

5409. **Japan.**—I should be glad of information as to photographing in Japan. What is the exposure as compared with south of England? Will xylonite films stand the climate, and where can plates be obtained?—**NEBIT.**

5410. **Printing Processes.**—What is the best printing-out process to obtain a sepia tone (like the

naturalistic uranium nitrate tones) on matt-surface paper, and the best paper obtainable to give a rough matt-surface?—**EXCELL.**

5411. **Printing-in Clouds.**—Will any reader kindly describe a simple method of printing-in clouds in landscape (half-plate size) with bromide paper? It is most difficult to cut paper masks to correspond with objects in landscape, especially with foliage, and the shortness of exposure precludes moving the paper mask and so avoiding hard lines. What are the best and cheapest cloud negatives for half-plate size?—**PALLAS.**

5412. **Moonlight Effects.**—Will some kind reader inform me how to obtain moonlight effects in photographs, and what exposure is needed?—**IGNORANCE.**

5413. **Hand Camera.**—I want to use my quarter-plate Instantograph as a hand-camera. Can any reader give me particulars for making a case for it? I want to know the dimensions, whether the lens and shutter sold with the camera can be used, and what is the distance I must rack the camera out so that all objects beyond, say, 8 or 10 ft. would be in focus?—**IGNORANCE.**

5414. **Eikonogen Developer.**—Will some one kindly inform me of a good eikonogen formula for the various bromide papers?—**INQUISITIVE.**

QUERIES UNANSWERED.

- Jan. 1.—No. 5387.
 " 8.—Nos. 5348, 5354, 5357, 5364.
 " 22.—Nos. 5379, 5380, 5382, 5383, 5384, 5385, 5387, 5391, 5392, 5395, 5396, 5397.

ANSWERS.

5350. **Gloss on Prints.**—The prints may be rolled, i.e. passed through a press, which consists either of two rollers or one roller and a flat plate. The polish, therefore, results from great pressure, which condenses the paper of the print. Rolling presses are not, as a rule, heated. Mr. Tylar, Birmingham, manufactures a glaze known as "Tylar's Brilliantine," which, he says, imparts a high gloss to the prints, "gives breadth and brilliancy to the shadows, and preserves the print from atmospheric action. Price, 1s. per jar." I have not tried it. I have an idea that I have seen some mention of another solution for applying to prints, but at present I cannot find it.—**G. P.**

5352. **Emulsion Formula.**—The *Amateur Photographe*, Paris, 24, Bd. St. Germain, has published in the number of the 1st of June, 1891, a formula for emulsion employed by the members of the Amateur Phot. Club of Strasburg. It seems to be easy, good, and cheap. Buy the number and try.—**KI-NON.**

5360. **Acid Fixing Bath.**—There was a leader on the "Acid Fixing Bath" in the *AMATEUR PHOTOGRAPHER* for January 15th, 1892, page 25. "A. G." will find the desired information there regarding pyro-developed negatives; the advantages are the same for all developers.—**G. P.**

5360. **Acid Fixing Bath.**—This bath keeps clear a long time, and wants only to be strengthened by some addition of saturated hypo solution.

5366. **Bromide Paper.**—Cut a piece of note paper to the size of the outside opening of your printing-frame. Put the negative into the frame and jam it up into one corner. Hold the frame up between you and the light, supporting the negative on the back with the finger, and, having put the note paper over the front of it, trace the outlines of the landscape in pencil, taking no heed of trifling projections above the skyline. Now cut out mask and snip the edge very finely in the way vignettes are done. Mark the top of the printing-frame, and, taking it into the dark-room, insert a suitable cloud negative, and on it a bromide paper. Put the mask on the front, and then expose for about one-eighth or one-tenth of the normal exposure. Return to the dark-room, remove the cloud negative and mask, insert the landscape negative, and give full normal exposure. Always jam the negatives, etc., up into the same corner, and remember which is the top of your printing-frame and bromide paper. Clouds are best printed in a subdued light. Regarding the second query, the sulpho-cyanide combines with the gold and forms a salt from which the gold is more easily deposited than usual.—**G. P.**

5370. **Lamp Shade.**—There was an article in *Work*, No. 148, on "Transparencies," which will supply the information desired. As a guarantee of its excellence I need only say that it is by Mr. Walter E. Woodbury. The magazine will be sent by Cassell and Co., post free, for 1d.—**G. P.**

5372. **Thin Negatives.**—A very good intensifier is found in Eder's "Handbuch der Photographie." It was first described by Edwards:—4 gr. of chloride of mercury are dissolved in 200 gr. of water, add thereto a solution of 10 gr. of iodide of mercury in 65 gr. of water, dissolve the red precipitate by the addition of 8 gr. of hypo in 65 gr. of water. You may get any degree of intensifying by leaving the negative more or less in this bath. Wash afterwards carefully during some hours. The solution can be stored up and used repeatedly.—**KI-NON.**

5377. **Lantern Lights, Candle-power of.**—The following method is used in light to compare the intensities of different sources of light; this method is called "photometry" (light measurement), and measurement is based on the law of inverse squares. When we speak of lamp being 5, 10, 20 candle-power, we mean that the lamp sends out 5, 10, 20 times as much light

as a standard candle. Having erected a screen and placed a vertical rod a few inches in front of it, the lights of which the intensities are to be compared are so placed as to cast shadows on to the screen of equal density. The distances from the shadows are then measured and their intensities calculated. Suppose a candle is placed 2 ft. from the screen and the lamp of four wicks at a distance of, say, 10 ft., and both cast shadows of equal density, the illuminating power of the lamp is:

$$\frac{(10)^2}{(2)^2} = \frac{100}{4} = 25 \text{ times}$$

that of a candle. The same mode of procedure has to be carried on to measure the intensities of the lamps J. C. King requires the candle-power of. If *a* is the distance of the first light from the shadows (not the rod), and *b* the distance of the second, then the intensity of first light : the intensity of second light :: *a*² : *b*².—**CYANIN.**

5377. **Lantern Lights, Candle-power of.**—Mr. Pumphrey states in his catalogue that they are as follows, respectively: Oil lamp, 4-wick, 60; oxyacetylene lamp, 180; blow-through jet, 190; mixed jet, 427; ethoxygen light, 420; but it is very doubtful whether an amateur will get as great a light as above indicated without a good deal of practice.—**EXPERT.**

5378. **Making Hand-cameras.**—An excellent article on converting a quarter-plate camera into a hand-camera appeared in *Work*, No. 72 (Cassell and Co., post free, 14d.) With regard to the suitability of a landscape lens for instantaneous work, it would depend upon its focal length and ratio aperture. Only very short-focus lenses are available, and of these that one is to be preferred which includes the narrowest angle. For general use in instantaneous work *f*/11.3 is the best stop, and the lens cannot be said to be suitable if it works at a smaller aperture. The best lens for a quarter-plate hand-camera is, I believe, a 5 by 4 rapid rectilinear of 5½ in. focus. Read the articles by W. Jerome Harrison, F.G.S., in the *AMATEUR PHOTOGRAPHER*.—**G. P.**

5381. **Lens for Condenser.**—No part of a photographic lens will make a satisfactory condenser, which if smaller than 3½ in. at least, is practically useless for the purpose. The whole of it might make a good objective.—**EXPERT.**

5386. **White Ink for Marking Lantern-slides.**—W. Edison might try grinding sulphate of barium with a little oil of turpentine and any colourless varnish to the consistency required.—**T. DOWLING.**

5386. **White Ink for Marking Lantern-slides.**—White ink for lantern slides may be made with white oxide of zinc (zinc powder) and a solution of gum arabic. No white ink will run as freely as black or coloured. Why not use white or coloured mounts?—**EXPERT.**

5388. **Lantern.**—This is a difficult question to answer, but some ideas can perhaps be obtained from the articles now appearing in the *AMATEUR PHOTOGRAPHER*.—**EXPERT.**

5389. **Blackening Lens Stop.**—Remove as much of the old blacking as possible with fine glass paper, warm the diaphragms till they can just be borne on the back of the hand, and immerse for ten seconds in a solution made by dissolving copper filings or wire in nitric acid diluted. Now heat them again over a clear flame, and a fine dead black will be the result.—**G. P.**

5389. **Blackening Lens Stops.**—Presuming they are brass, this can be done with 1 part hyposulphite of soda, 2 parts sulphate of copper, 100 parts water. Cleanse the stops thoroughly, place them in the mixture, and heat it. A darker tint can be procured by adding more hypo. There are other methods of blackening brass, such as with arsenic, iron, and sulphate of copper dissolved in spirits of salts, or with nitrate of silver, but the formula given is perhaps the most suitable for an amateur to use.—**EXPERT.**

5389. **Blackening Lens Stops.**—Dissolve copper in diluted nitric acid, plunge the stops, previously warmed, into this solution, remove (holding the stops all the while with tweezers) and hold over a spirit lamp (methylated, not oil). The diaphragms turn green, then jet black, of a dull appearance.—**CYANIN.**

5390. **Waxing Paper Negative.**—It is better to use the negative without waxing the paper, but if you are in a hurry to get a proof, moisten the back of the negative with a tuft of cotton or a little sponge dipped in pure benzine. The transparency is not permanent, but will last long enough for printing a proof. The process can be reiterated. You can also employ it only for a part of the negative which would be too dense.—**KI-NON.**

5393. **Hand-camera.**—The hand-camera I like best for less than £2 is the Arcanum, No. 2, manufactured by Talbot and Eamer, Blackburn. It carries twelve quarter-plates and is fitted with rectilinear lens, time and instantaneous self-setting shutter, and two finders; it is made in polished or ebonised mahogany, and its price is 37s. 6d.—**OXIDE.**

5394. **Lantern Making.**—A half-plate lens will make a good objective, and if of the usual focus, 8 in., it will give a picture, 3 ft. 9 in., about 10 ft. from the lantern. This would not be of much use in a private house, especially as it is doubtful whether any less light than that produced by a blow-through jet would be suitable. A condenser must be used or only the centre of the slide will show. Directions how to make a lantern cannot well be given in this column. See reply to 5388.—**EXPERT.**

EDITORIAL.

SPECIAL NOTICE.—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

H. NYE.—We will enquire into the matter of your certificate and write you.

F. W. FLEWIS.—All medals are now in the engravers' hands, and as soon as ready, will be forwarded to the respective owners. The Secretary of your Society will have already received official notice about the Prize Slides.

GEO. L. SNOWBALL.—Thank you for the kindly expression of your good feeling. We shall do our best to make the new Supplement fulfil all the features of the old Reporter.

W. ERRINGTON COWAN.—See last week's issue, "Our Views," p. 60, as to "Holidays with the Camera" prints. The best answer to your rather ungracious remark as to size is that the Gold Medal pictures were hand-camera shots.

F. PARTRIDGE.—The relative rapidities are, according to our experiments, Ilford rapid 1, Fry's 1-7th; the exposure, therefore, being 1 for Ilford and 7 times for Fry.

M. PELLUHET (Paris).—We hope to be able to have the entry forms for "Ladies' Competition" ready shortly; any photographs are admissible. Many thanks for the answers. We will look up *Amateur Photographs* of Nov. 1, and translate notes.

F. TURBON.—If the camera is required for copying, the extra-special would certainly be the most useful.

A. W. V.—There is a very good paper in the *Reporter* for February, 1891, p. 371, which will give you a lot of historical notes. Werge's "Evolution" would be of assistance to you. Taylor's "Optics" will certainly give you all the necessary optical part. Illustrate your lecture either by lantern slides or specimen prints.

SCOTSMAN.—The only advantage of No. 3 lens is its greater aperture; we should certainly recommend No. 2. We have tried No. 3 and like it very much, but whether it is worth the extra price is another question. Why not ask the maker to send you a specimen of No. 2 and No. 3 to try?

F. A. H.—We felt sure from the character of your work that you were using hydrokinones. You would get more satisfactory results with pyro, and probably then your plates would not merit the reproach of under-exposed. Let us hear from you again shortly, or ask the North Middlesex a question or two.

THEO DAVIS.—Thanks for "Lord of the Isles." The "Forth Bridges" are too black and gloomy to be pleasing; in fact, all your prints suffer in this way, and the children certainly are not sunshiny, though they should be. You can get even better results still, we think.

STANLEY BROOK.—You are not disqualified, and we shall be pleased to have you enter.

KENNETH (Biaritz).—The faintness of the cathedral spires is caused by halation; these and the distance are over-exposed, but the foreground correctly exposed; development should have been carried further, and do not use pink paper; print slowly and you will get better results. "Bayonne" the fault in this is due to your developer; you must carry your development a great deal further than usual with the developer you use. Cannot you use pyro?

BROAD GLOSTER.—Very pleased to see your prints and have you enter our competitions. The use of a single lens for architecture is, if the lens is not mis-used, quite permissible, and the distortion which ought to be there, not visible. Let us have a line from you as to how you prevent halation.

R. A. R. BENNETT.—Pine, paper makers, Farringdon Street, will supply the paper.

J. RILEY.—The burnisher is quite satisfactory and may be relied on.

M. C.—(1) Out of focus and under-exposed. (2) Over-exposed and the figure is in the wrong place. (3) As a picture, bad; as portraits, probably good; well exposed, printed, and developed. (4) Fair. (5) The only picture in your set, and this is entirely spoilt by double outlines from paper shifting in printing. The careless use of figures, which are evidently rather portraits, spoils your work. Never allow your friends to be the principal objects in landscapes; make use of them if you like, but use them artistically.

W. HAGEN.—If you like to send the lenses to us, we will work out the data you want; but Mr. Wall, in his "Photographic Procedure," has given you all the necessary instructions. The fee is 2s. 6d.

H. DURRANT.—Faint heart never won fair lady yet. J. H. COLE, REV.—We cannot trace your "Innishannon Bridge." When was it sent, and for what?

W. J. TUCKER.—Thanks for hint, which we may adopt.

A. H. WEBLING.—We have no Monthly Lantern Slide Competitions this year.

H. CRISP (Australia).—Many thanks for your letter and print, which is decidedly pleasing. How is it coloured? We will try and send you the slides and some new prints shortly. Entry forms sent and your complaint noted.

J. W. FORREST.—Our "Annual" will not be issued before March; the exact date we do not yet know.

B. A.—(1) Fair; the high lights, the hair, and cap are a little too white; well exposed, and printed; (2) good; (3) poor both technically and artistically, under-exposed and over-printed; (4) good, but the background should have been a little further off; (5) good; Nos. 2, 4, and 5 are quite up to standard.

J. F.—(1) Glasgow High School, Munro Somerville, Secretary, High School; Glasgow Photographic Association, F. Mackenzie, 122, Wellington Street, Secretary; Glasgow and West of Scotland Am. Phot. Soc., W. Goodwin, 3, Lyndock Street, Secretary. (2) Mel-don's "Chemistry of Photography," 6s. (3) If you reduce the metabisulphite to 120 grains, the developer will act well. (4) Shorten your exposure and omit the bromide, or some of it, from developer. (5) Sulphite of soda, metabisulphite of potash are the two most used.

A. R. DRESSER.—All medals are now in the engraver's hands, and as soon as received will be forwarded.

M. L.—The only fault in your print is that the foreground wants breaking up with a bairn or two, otherwise it is quite up to standard.

GEORGE PRIZE.—It is quite possible that your letters, like a good many others, are waiting till we can get out of the grip of the influenza to answer. With regard to the examination the idea was that possibly some hardship was involved on some competitors by the short notice, and grace was extended to all therefore. Still, it will not occur again.

A. F. LAWTON.—We do not see how either of your photographs can be admitted. We cannot depart from the rules laid down.

CAMERA.—(1) The old lens you have is possibly a single landscape lens, and would probably cover 12 by 10. (2) The lens is then evidently part of a portrait lens, and requires the negative back elements to complete. (3) Stopping it down would help it, but the plane side should be turned towards the object and the stop placed in front. (4) It certainly was not dear. (5) You will find some notes in "Photographic Procedure," p. 25, July 10th, 1891. (6) Black tones are not dependent on the bath, but on the negative.

INSTANTOGRAPH.—The lamp named is efficient for ordinary work, and is fitted with a ruby light, but might be had fitted with orange.

J. ROBINSON.—You cannot use part of a large negative under the conditions named.

TR. 4.—We shall be pleased to criticise prints and return.

NOVICE.—See the article in this week's number on the Actinograph; this probably will answer your question. You must let us know what you want the lens for; we decide this point first, then choose the lens.

J. L. L.—When the shutter is behind the lens the foreground receives less exposure than the sky, just the reverse of what is usually wanted.

BEGINNER.—A. R. Wormald, Sutton, Surrey, is the publisher of the book you name.

W. AND S. INGHAM.—We have a letter from you, which refers to a subject about which we know nothing.

F. MOLYNEUX.—(1) Under-exposed. (2 and 3) Extremely interesting, just the sort of prints (to have sent to *Engineering* for illustrating a note on this blow-up; they are rather under-exposed, but otherwise good. (4) Just a shade too gray, a decided black would improve it considerably.

ANXIOUS.—No. 1 negative smashed in transit, under-developed. No. 2, a little too hard and under-developed. (3) Right, but the background spoils it by the creases. (4) Ditto, too stiff and formal. (5) Ditto. (6) Under-exposed and under-developed, but decidedly more pleasing in that there is less evident posing about it. (7) Utterly spoilt by the tail end being cut off. (8) Good. (9) Too stiff and formal. (10) Ditto. (11) Ditto. (12) Too darkly printed. (13) Too hard. (14) Too stiff and formal. (15) Ditto. Avoid if possible the repetition of faults we have noted, and carry your development further.

P. B. DURNFORD.—Many thanks for report, which is utilised elsewhere.

E. A. PORTER.—We should prefer the square bellows camera and the single lens by the same maker.

Miss M. E. Ward	Newport
C. P. Bolton	Waterford
Geo. Lord	Salford
Thos. Clarke	Witley
F. T. Russell	King's Lynn
E. E. Murray	Clapton
Stanley C. Bright	Genoa, Italy
W. Drapper	Rotherhithe
J. B. Young	Glasgow
L. Wiltshire	Norwood
S. J. Bradburn	Manchester
A. Jamieson	Leamark
W. H. Webster	Newcastle-on-Tyne
Ernest Fox	Basingstoke
Thos. S. Lane	Birmingham
J. S. Breeze	Southport
W. R. Ainsworth	Alton
Miss F. Hardman	Reigate
Wm. W. Sowers	Hillhead
M. S. Bryant	St. John's
W. MacMillan	Rotheray
E. Myers	Keighley
J. H. Welch	Liverpool
A. Brooker	Hastings
J. Harriman	Henley
E. V. Ive	Henley
T. F. Bell	Belfast
C. H. Hinde	Southport
Miss S. E. Douglas	Perth
Rev. F. Partridge	Launceston
T. Lisle	Wolverhampton
G. F. Oliver	St. John's Wood
Mrs. E. Jessop	Instow
G. Brodie	Aberdeen
T. H. Shirwood	Macclesfield
J. S. Roscoe	Bolton
J. K. Brown	Inverness
Dr. Ringrose Atkins	Waterford
W. G. Morris	Macclesfield
A. Geekie	Coupar Angus
Miss C. Fawcett	Durham
W. Denham	Leeds
E. Meden	W. Norwood
S. G. Geekie	Coupar Angus
W. H. Kirkland	Nottingham
J. Watson	Newcastle
J. Riley	Haslingden
W. Whyman	W. Smethwick
W. T. Barton	Morriston
S. W. Swinnerton	Stroud Green
W. J. Cleal	Bridport
J. Thompson	Barton-on-Trent
R. L. Kingsford	Cambridge
A. C. Newett	Fleetwood
R. H. Dutton	Crore
W. D. Ashburn	Bromsgrove
Major F. C. Richards	London
W. J. Clarke	Sidcup
G. W. Jenkins	Croydon
F. M. Gurrin	Carisbrook
E. Nicol	Kinnoull
E. G. Beilby	Edinburgh
G. T. Firth	Wakefield
C. V. Swift	Dent
H. Durrant	W. Bromwich
A. M. Ogilvie	Glasgow
H. H. Sealey	Bath
A. Scott	Stratford
J. Y. Slater	Winterset
I. C. Johnson	Gravesend
Miss M. Acton	Paris, France
W. S. Anderson	Edinburgh
J. H. Redwood	Chingford
M. E. Mallet	Finchley
H. J. L. J. Masse	Ealing
C. Churchill	E. Greenwich
J. A. Powell	St. John's Wood
S. J. Steele	Holland Park
J. Chamberlain	Tunbridge Wells
Geo. C. Jardine	Stamford Hill
H. W. Bloomfield	Norwood
Viscount Maitland	Lauder
R. W. Branthwaite	Rickmansworth
A. J. Champness	Sydenham
R. Malpas	Reading
W. J. Battell	Walthamstow
G. S. Steena	Genoa

Owing to pressure on our space, the continuation of the list of competitors is held over till next week.

Monthly Competition.

No. 22, INLAND SCENERY, WITH OR WITHOUT FIGURES.

PRINTS have been received from

Rev. J. H. Cole	Innishannon
W. T. Tucker	Loughboro'
T. A. Lisle	Wolverhampton
Mrs. E. Bird	Kington
J. H. Spencer	Chester
E. N. Ellis	Liverpool
J. D. Paterson	Birkenhead
T. M. Brook	Manchester
Miss E. A. Perkins	Shaftesbury
F. W. Spalding	Norwich
J. Parker	Hereford
A. Goodwin	London
Stuart Rhodes	Canterbury
H. Holmes	Derby
Miss C. Hunt	Silchester

Sale and Exchange.

RULES.

CHARGE.—Twelve words or less for Fourpence

Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

ADDRESS.—All advertisements (which can be received up to Wednesday morning, 9 a.m.) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

CARRIAGE must be paid on all apparatus sent for report, and they will be returned carriage forward.

Cameras, Lenses, etc.—For sale, Fallowfield's Facile hand-camera, only used three times, plate holders, lens, and view finder, complete; also black will case, price 30s.; also Underwood's Instanto camera, 1889 pattern, price 10s.—Hebeler, Western Road, Romford, Essex.

Half-plate camera, lens, double back, 25s.; bargain.—Harold, Lion Hotel, Wicker, Sheffield.

Quarter-plate 1891 camera, lens, double slide, new, 14s. the lot, worth treble.—Sidney Crosse, 2, Cromwell Place, Bedford.

Enlarging Apparatus, etc.—Lancaster's 12 by 10 combination Multum in Parvo, with complete sets carriers; cost £2 19s.; in splendid condition; what offers?—H., 52, Shepherd's Bush Road, W.

Hand-Cameras, etc.—Fallowfield's Facile, with R.R. lens, good as new, price £3 10s.; approval; deposit.—Norrington, Abbotfield, Plymouth.

Underwood's Sphinx hand-camera, carries 12 plates, lens working at f/6, two finders, double shutter, covered Levant morocco; but little used; approval; deposit; £3.—No. 100, office of this paper, 1, Creed Lane, E.C.

Talmer latest pattern hand-camera, f/6 EurySCOPE lens, Iris diaphragms, adjustable focus, condition as new, canvas waterproof case, and dozen extra sheaths; what offers?—H., 52, Shepherd's Bush Road, W.

Marion's 10 by 8 camera, six slides; sell, or exchange first-class hand-camera.—Box 75, Hartley Barron, Sheffield.

Lenses, etc.—Fallowfield's 5 by 4 landscape lens, 5½ focus, perfect condition; what offers?—Male, Soham.

Watson's half-plate R.R. lens, Iris diaphragms, Thornton-Pickard time and instantaneous shutter to fit same; also half-plate waterproof bag. This lens belongs to an artist and has been used for numerous studies, etc., the definition being splendid. Condition as new; price £1 the lot; reason for selling, have whole-plate.—No. 101, office of this paper, 1, Creed Lane, E.C.

Landscape lens, 10 by 8, revolving stops, good as new, 17s. 6d.—Haddock, Leigh, Lancashire.

Half-plate rectilinear lens, excellent condition, price £2.—X. Y., 4, Blenheim Crescent, Notting Hill, W.

7 by 5 R.R. lens, working f/8, for sale, or exchange for half-plate W.A.R. lens.—H. A., 52, Shepherd's Bush Road, W.

Sets.—Camera, half-plate, Optimus R.R. lens, all accessories, good and cheap.—North, Lea Mount Villa, Woodford, Essex.

Quarter-plate camera, The Baroness (by London and

Paris Optical Co.), perfectly new, and every possible movement; Eastman's latest roll-holder, to fit above; also 5 in. Beck's R.R. lens, iris diaphragms; 4-fold tripod, 16 in. when closed, all in solid leather look-up case; the lot for £8 10s.—Thomson, Laurel Bank, Halifax.

Sundries.—Nos. 170—332 AMATEUR PHOTOGRAPHER; 1—118 "Photography," 6 missing; "British Journal Almanack," '84, '88, '89, '90, '91; "International Almanack," '88, '89; "American Annual," '91; "Science of Photography Year Books," '89—'91; "Photographic Quarterly," No. 1; "Photographic Reporter," 2 and 3; exchange for good engravings, prints, or cash.—Rosenau, Maswell Park, Hounslow.

Lancaster's enlarging lantern, 5 in. condensers, perfect, 50s.; five superior flash-lamps, for groups, 7s. 6d. the lot; 8 in. burnisher and lamp, 10s. 6d.—M. Newhouse, 90, Victoria Terrace, Lancaster.

For sale, one Lancaster's oval, spring See-saw shutter, cost 12s. 6d.; and one two-fold tripod, with brass top, 7s. 6d. each; both half-plate and as good as new; deposit.—A. W. Cook, 123, Pownall Road, Dalston, N.E.

Taylor and Hobson's quarter detective lens and Kershaw's shutter, new, 60s.; good camera and three slides, double, 20s.—H. Cooke, 3, Weekday Cross, Nottingham.

Harmonium for disposal, beautiful rich organ-like tone, seven stops (all effective), handsome Gothic design, quite new, and guaranteed faultless; take £5 10s; carriage paid; genuine bargain; full particulars.—F., 35, Christchurch Street, Ipswich.

WANTED.

Cameras, etc.—Wanted, 5 by 4 camera, good make, condition, cheap.—Knight, Blackrock, Dublin.

Cameras, Lenses, etc.—Wanted second-hand, in good condition, a 24 by 18 (studio), 15 by 12, and 8½ by 6½ camera, complete; also lenses, dishes, etc.—Apply to A. K. T., 10, Sibella Road, Clapham, S.W.

Hand-Cameras, etc.—Hand-camera, also oil lantern, fullest particulars.—Wardleworth, tailor, Blackley, Manchester.

Wanted, the Talmer hand-camera, or good make; exchange six stringed nickel-plated banjo, Long's American head and grand tone.—French, 64, Stonefield Road, Hastings.

Lenses, etc.—Wanted, 7 in. focus 6 by 5 lens, by good maker, Optimus preferred.—W. G. Perks, Cleveleys, Walthamstow.

Wanted, Dallmeyer's 5 by 4 doublet, cash and exchange.—Jones, Lower Eaton, Hereford.

Optimus 5 by 4 rectilinear lens wanted, perfect and cheap for cash, or good exchange.—Tims, Welshpool.

Negatives.—Loan or purchase, negatives of subjects of popular and artistic interest, scenery, etc.; size about cabinet.—Ashton and Sons, Church Walk, Southport.

Sets.—Quarter Instantograph camera, with lens, double back, and tripod, cheap.—A. Partington, Molyneux Street, Longsight.

Wanted, quarter-plate outfit, good maker, and good condition.—T. G. Beaumont, Woodleigh, Dewsbury.

Wanted, whole-plate outfit, three double backs, latest improvements, cheap for cash; approval.—P. B., 7, Madeira Terrace, South Shields.

Sundries.—Wanted, lantern screen, not smaller than 12 ft. 6 in., quote lowest terms.—L. Bolton, 15, Wells Road, Sydenham.

To camera makers. Wanted, alterations to Bloomer's instrument.—Address, Box 50, Hartley Barron, Sheffield.

Wanted, chemicals and few photographic sundries, cheap; send list.—Knight, Blackrock, Dublin.

H. HUGHES & SON,

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½-Plate, 88s.; ¼-Plate, 70s.; 1/1 Plate, 100s.

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All Apparatus, Chemicals, etc., guaranteed Dark Room for use of Customers.

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The Presto Camera, 10/6; The Guinea Hand Camera,

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See "Amateur Photographer," December 18th and 25th, 1891

By this Discovery the Films in Gelatine Dry Plates, both negatives and transparencies, can be enlarged mechanically from ¼-plate to Cabinet, and from ½-plate to whole plate practically without risk, distortion, loss of permanency or tone, whilst the preservation of sharpness of detail, and absence from all grain, are amongst the many advantages by which this process will recommend itself, and prove invaluable to the Photographic World.

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The AMATEUR PHOTOGRAPHER

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Telegraphic Address: VINEY, LONDON

Office: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 383. Vol. XV.]

FRIDAY, FEBRUARY 5, 1892.

[PRICE TWOPENCE.

OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—Camera Club Conference—Phot. Soc. of Great Britain—Reversed Negatives—Photography in Colours—Lunar Photographs—Aristotype Paper—Coventry and Midland Phot. Soc. Elementary Lectures—Ladies' Club—Copyright Trial—Ballarat A.P.A.—New Society for Durham.

LEADER.—Gelatino-chloride Paper.

LETTERS.—Prints Adhering (J. G. P. Vereker, R. A. R. Bennett, J. Dixon, J. Brown)—Postal Photographic Club (H. E. Trew)—A Shutter Question (A. C. N.)—Washing Aristotype Paper (Cyanin)—Camera Club Conference (G. Davison).

ARTICLES.—Photographic Procedure (Wall)—Elementary Photography (Hodges)—Celluloid Films (England)—The Actinograph (Hurter and Driffield)—Carbon Printing (Bankart)—Toning Gelatino-chloride Paper with Platinum.

REVIEWS.—Congres International de Photographie—Recettes Photographiques (Buguel)—Verzeichnis (Ternpsky)—Photographer's Indispensable Monthly (Adams)—Instruction in Photography (Abney).

SOCIETIES' MEETINGS.—Aberdeenshire—Bath—Bristol—Camera Club—Cardiff—Cornish—Coventry and Midland—Douglas—East London—Hackney—Hexham—Holborn—South Hornsey—Huddersfield—Phot. Soc. of Ireland—Liverpool—Oxford—Richmond—Rochdale and District—Selby—Sheffield Camera Club—Sunderland—Tunbridge—Tyneside—West London.

QUERIES AND ANSWERS.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All Communications should reach the Editor by Tuesday.)

TERMS OF SUBSCRIPTION—

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TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE and EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, and VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (SALE and EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.)

"Amateur Photographer" Monthly Competition No. 33.—**"SEA PIECES or RIVER SCENERY."** Latest day, February 22nd. —Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, March 11th.)

WE publish in our correspondence columns a letter from Mr. Geo. Davison, Hon. Sec. of the Camera Club, announcing the Annual Conference at the Society of Arts, John Street, Adelphi. We are pleased to see that the Club have arranged to hold evening meetings, and as all photographers are invited to attend, it is quite probable that this innovation will lead to very much larger attendances, and considerably greater interest being taken in the Conference generally. The idea of holding an evening conference has, we believe, been suggested a year or two back, and we look forward in hopes of hearing some useful practical papers, as in past years.

ON Tuesday evening the 2nd inst. we attended at the Photographic Society of Great Britain to hear Prof. Meldola deliver his lecture on "Photography as a Branch of Technology," the last of a series of lectures instituted by the parent society to promote "technical education of a more complete character than that provided by the elementary schools," and, notwithstanding the fine weather, there was only a meagre attendance. The lecturer, in consequence of suffering from the prevailing epidemic and family bereavement, was unable to attend. The paper, and the discussion which followed, are of sufficient importance to lead us to give a summary of the same in our next issue.

M. BALAGNY, at a recent meeting of the Société Française de Photographie, revived the old method of making reversed negatives first proposed by Eder and Pizzighelli in 1881. This was to bathe an ordinary gelatino-bromide plate in a 4 per cent. solution of bichromate of potash, drain and dry in the dark, and then expose behind the negative, to be reversed, for some time to daylight. The action of the light renders the gelatine insoluble, and prevents the access of the developer, which should be preferably the ferrous oxalate, so that a reversed negative is obtained. The only novelty in the process of M. Balagny is that he states that the whole of the developing may be performed in daylight.

ACCORDING to *Le Moniteur de la Photographie*, edited by M. Leon Vidal, the announcement is made that MM. Auguste et Louis Lumière have repeated the experiments of M. Lippmann with regard to the obtaining of coloured reproductions of the spectrum with great success. "Les couleurs y sont éclatantes; on ne saurait obtenir un rendu plus complet," says M. Vidal. The plates used were

gelatino-bromide prepared in a special way, and were quite translucent, possessing no rapidity, but giving very great density.

FROM the *Comptes Rendus* we see that MM. Fabre and Andoyer have been utilising colour-sensitive plates for photographing the eclipsed moon, and they find that whereas the shadows are represented on the ordinary plate by absolutely no deposit, the colour-sensitive plates show considerable detail, and they come to the conclusion that collodio-bromide rendered colour-sensitive by means of eosine and cyanine are relatively more sensitive to red and yellow rays than gelatino-bromide plates prepared in the same way. They propose to continue these experiments, repeating them on Mars and Jupiter, with his red spot, and the coloured stars.

ACCORDING to Herr R. E. Liesegang, it is possible to considerably shorten the duration of insolation of gelatino-chloride paper. If after the lapse of a few moments the paper is removed from the frame, when it is only faintly impressed with an image, it may be brought to complete vigour by immersion in a concentrated solution of gallic acid; an intense blueish-black tone is readily obtained by this treatment, and after careful washing or fixing in hypo the print turns to a pleasing brown without loss of vigour. If the gallic acid solution is neutralised with carbonate of potash or soda, an exposure of even five to ten seconds is sufficient. This may possibly be quite an independent discovery on the part of Herr Liesegang, but there has been for some months a chloride paper on the French market which could be treated in this way, and of this paper we have had some little experience, and had tried it for gelatino-chloride, but found that to obtain anything like pure whites it was absolutely essential to convert any free nitrate of silver into chloride, carbonate, or acetate by washing in such a solution. This process will certainly find its way into our experimenters' hands, and will prove of service during the dark days of winter.

THE Coventry and Midland Photographic Society have instituted a series of elementary lectures on photography, with a view to the encouragement of the art, and to assist beginners. This is a step in the right direction, and we should like to see more societies paying increased attention to the ever-growing number of young aspirants. The Camera Club and several of the leading societies are doing good work in this direction, and no society is without some leading lights who are capable of thus helping the tyro. We hope to be able next week to briefly indicate the leading points which should be observed in thus giving instruction, and we shall endeavour to give a full syllabus of each subject, and the treatment of the same.

WE regret to state that we have only had two responses with regard to the formation of a Ladies' Club or Central Photographic Society in London, and therefore, unless more answers are forthcoming, the idea must remain in abeyance so far as we are concerned.

A CASE of considerable interest to photographers generally, was tried last week before Mr. Justice Collins and a special jury. A house furnisher at Wimbledon offered for sale certain prints and photographs, copies of pictures, the copyright of which belonged to publishing firms. The evidence showed that the house furnisher had obtained "these bad photographs" from a certain person in Belfast, and it was asserted that they were bought in the belief that the vendor was the agent of the publishers holding the copyright. The jury acquitted the house furnisher of

guilty knowledge, and he has been enjoined to refrain from further sales and to surrender all the remaining prints in his possession and to pay the costs of the plaintiffs. As a contra account, this unfortunately ignorant dealer has the satisfaction of knowing that he has relieved his feelings as he admitted he "punched" the Belfast man's head, and "blackened his eyes." This may serve perhaps as a timely warning to some of our readers to make themselves cognisant of the law affecting copyright.

WE have received, though rather late, a charming New Year's card bearing the good wishes of the President of the Ballarat Amateur Photographic Association. It is a cabinet silver print, containing on an ornamental ground five little pictures. The first is a marble group entitled "The Flight from Pompeii," by Benzoni, for which the sculptor refused £4,000. "The group stands in a pavilion in our Botanical Gardens." No. 2 is a view of No. 2 Star Claim, "from which many thousands of pounds' worth of gold has been obtained, Ballarat's staple industry being mining." No. 3 is a fine yacht in full sail "on our Lake Wendower, which has an extent of four square miles, and is about one and a half miles from the centre of city, and has the Botanical Gardens on its banks most beautifully kept. The lake teems with fish, and has numerous sailing and rowing boats and four steamers. No. 4 is a general view of Ballarat from the post-office tower, looking east. No. 5 represents the Moora-bol falls about fifteen miles from the city, and was taken on the occasion of our last annual excursion on the Prince of Wales' birthday. There is some very nice scenery in the vicinity of the falls, and also two other falls nearly as large as the one shown, within a mile." We have to tender our hearty thanks for the kindly thought which prompts one of our readers so far distant to send us such an artistic and pleasing specimen of the application of our art.

MR. R. HANXWELL, of The Avenue, Durham, informs us that he is endeavouring to form a camera club in that city. He has already sent out several letters, and has received substantial promises of support. He will be glad to hear from any of our readers living in or around Durham who may be desirous of joining the proposed society.

GELATINO-CHLORIDE PAPER.

IT would seem almost impossible for us to state any new point about this printing process, but that it has not yet been mastered by all our readers is evident to us from an examination of the prints sent in to our last Monthly Competition. The special points to which we wish to draw attention in this article are, first, yellowing of the whites, and secondly, irregular toning.

As most of our readers know, this paper consists of an emulsion of chloride of silver, with an organic silver salt and some free nitrate in gelatine. It is quite possible to make an emulsion which shall contain neither chloride nor free nitrate and yet be capable of giving equally as fine results as commercial makes, but most, and we think we may safely say all, this class of papers contain free nitrate, which is in the first instance the cause of the yellowness. The second cause undoubtedly lies within the power of every operator to obviate, and we shall now try to show how this is to be done.

If an experiment is made with a sheet of paper coated with a plain solution of gelatine, and it be dipped for at least five minutes in a weak solution of silver nitrate, and then washed for ten or fifteen minutes in ordinary tap water, the chances are that the paper will show a decided

yellow tinge which is extremely difficult to eradicate. There it is and there it seems determined to remain, do what you will.' This suggests at once the direction in which it should be possible to find a remedy for the disease. And it is only fair to point out that Mr. W. E. Woodbury, in his work on this method of printing ("Gelatino-Chloride Printing-out Process;" Hazell, Watson, and Viney, Ltd.; price 2s.), p. 60, lays stress on this point, although the cause of the stain had already been pointed out by several workers. Mr. Woodbury says, "The prints will also become stained a brown colour, if allowed to remain too long in the first washing, or if there is an insufficient quantity of water. Make the first changes rapidly." The cause of the stain is undoubtedly the silver nitrate washed out, and, therefore, it seems logical to say let us destroy the free nitrate by converting it into some salt which is insoluble in water, and, therefore, not likely to combine either with the fibre of the paper or with the gelatine. This is not a difficult matter to do, and we have in our practice for some considerable time first washed the prints in a solution of common salt, which, needless to state, converts the free silver into chloride. If gelatino-chloride prints are thus treated there will be no yellowing of the whites.

Careless or faulty use of the toning bath will also in some cases tend to the same end. Using a bath too long or using a combined toning and fixing bath for too many prints at once, or using the same when it contains alum, are all likely to be factors which have the same result. We certainly should like to see the combined toning and fixing bath relegated to the shades of neglected and bygone processes. It is, we believe, the cause of more trouble with gelatino-chloride printing than anything else. In the first place it is compounded on principles which are directly opposed to every law, written or unwritten, on the production of permanent prints. It contains the very element in a nascent state which all authorities condemn as the most prone to cause fading, namely, sulphur. It has been reiterated so often that we do not intend to repeat here, the decomposition which takes place when alum is added to hypo. It is sufficient to assure every user of this bath that he can obtain equally fine results as regards tone with the separate toning and fixing baths, and at the same time his prints are more likely to be permanent, are more likely to be even and regular, and the extra trouble, if there be any, surely need not be considered in the face of these advantages. Some manufacturers specially recommend the use of simple baths, and it is a matter of indifference really which formula is adopted. Some workers prefer the borax; others, again, the simple sulphocyanide bath, and it is to the latter we incline; it is very simple, and, provided the chemicals are obtained from a reliable house, one may rely on having the sulpho salt pure. The chloride of gold may be either home-made or commercial. In either case the one essential point is to make sure that its solution is absolutely from acidity. Never mind about its being neutral; if it is distinctly alkaline it will do no harm, only modifying slightly, perhaps, the final tone of the image.

In toning emulsion prints one has to throw over all preconceived opinions as to the quantity of gold required for toning. A liberal allowance will repay the donor by giving finer tones and more permanent prints; starve the gold, and if the print does tone it will probably be by the aid of sulphur, or it will assume curious parti-coloured and greenish half tones, or else they will be eaten right out. A liberal supply of gold does not necessarily mean a concentrated toning bath. If the bath is too strong it will give blueish or slaty-blue half tones, and, on the other hand, a very diluted solution tends to give a peculiar rosy tinge to the whole picture. Choose the formula you think will suit

you best, and use it intelligently; have a fair amount of liquid in the dish, do not put too many prints in at once, and keep them on the move, and, above all, do not use the same solution for too many prints. If it is essential that you practise economy, then by all means preserve the used bath, and either send it to the refiners or else precipitate the remains of the gold yourself, by no means a difficult or expensive operation. It is quite possible, nay, more than likely, that someone will wish to ask how much gold will be required to tone a certain number of prints, and we regret to say that our answer must be very unsatisfactory, because it depends so much on the character of the print, the depth of printing; and it is obvious to all that prints vary enormously in the amount of surface, or rather, we should say, in the amount of the reduced silver which has to be toned. For instance, a portrait, a two-inch head on a light background, will require far less gold than the same head on a black ground. No real guide can be laid down, except that of experience and results.

Whilst on this point it possibly may be not out of place if we try to again impress on our readers the importance of the correct use of alum in connection with this paper. Some workers, as we have already pointed out, use the alum bath in the toning solution; others use it after toning, and if ordinary alum is used or the print is not entirely free from all traces of hypo, yellowing of the whites and subsequent fading will probably ensue. The only alum bath to use is the alkaline chrome alum one, recommended by Dr. Stolze. This may be used immediately the print is free from soluble silver salts, but the washing after this bath must be as thorough as ever. If this alum solution be used before toning it will be more than likely that this operation will proceed regularly and evenly; the production of slaty-blue tones in the high lights will, to a great extent, be prevented. Patches and stains are less likely to make their appearance, and when the print is squeegeed down to glass there is very little chance of its sticking, although talc, wax, or oil be not used. The gelatino-chloride printing-out process is undoubtedly one of the best we have when properly worked, but how few can do this well.

Letters to the Editor.

PRINTS ADHERING.

SIR,—In reference to Mr. Breeze's complaint about prints adhering to the glass, I have found the following process does away with this. First, clean the glass well by means of a nail-brush and Brookes's soap, so that the water flows evenly over it; next dry it by means of a cloth, then polish with a piece of wash-leather, or an old handkerchief till the moisture from the breath lies evenly over it. If there is a difficulty about this, give it a polish by means of fine Tripoli powder and alcohol. When the glass is clean, give it a slight coating of oil—I use Rangoon oil—by means of a pad of cotton wool, so as to leave the surface slightly greasy. If the glass is ground it requires no other treatment; if plain, it is best to repolish again with powdered French chalk, taking care not to absolutely remove all the French chalk. After use the glass wants re oiling if ground, or repolishing with French chalk if plain. If Mr. Breeze follows the above directions, and alums his prints before squeegeeing, he will have, I think, no more trouble.—I am, yours, etc., J. G. P. VEREKER.

SIR,—If your correspondent (J. C. Breeze) wants to know how to get off prints that are already stuck on, I am afraid he will ask in vain, for I do not think anything short of hot water will do it, and that also removes the film! People who suffer in this way should use a paste of white wax and oil of turpentine (three parts of each, put into a bottle and left to form a kind of pomatum), rubbed on the ground-glass with a bit of flannel, and then nearly rubbed off again, just before squeegeeing the prints down. I have treated scores of prints in this way, and have never

known one to stick. They must not be touched till they are perfectly dry. Why do so many use talc when it is acknowledged to be a failure nine times out of ten, unless you are exceptionally lucky? For glossy prints nothing comes anywhere near ordinary ferrotype plates; they require no preparation of any kind, and the prints never fail to tumble off when dry. He can also matt-surface his prints by rubbing with powdered pumice-stone when dry; they obviously can't stick then.—Yours, etc.,
Oxford, January 29th, 1892. R. A. R. BENNETT.

SIR,—In reply to the request of Mr. J. C. Breeze, I beg to offer him the results of my experience.

The best glass to use is the front of a plate-glass mirror, and the next is the back of an old negative from which the gelatine has not been removed, because in either case it is easy to see, by holding the plate at an angle, when the surface is clean.

The first important point is to clean the glass. This may be effected by rubbing over it a few drops of strong nitric acid, and afterwards rinsing in clean water. A mixture of fine whiting, ammonia, and methylated spirit, rubbed on with a sponge and afterwards polished off with a dry cloth, answers very well.

When the glass is perfectly clean and dry, some finely powdered talc should be well rubbed over the surface, and dusted off with a dry cloth or cotton wool.

The prints, after fixing, should be washed for an hour in several changes of water, and then placed for five minutes in a five per cent. solution of chrome alum, and again washed for an hour. With some papers the alum bath is not necessary, with others it is indispensable. It is generally advisable after the use of a sulphocyanide toning bath.

The prints should be lightly but evenly squeegeed and covered with blotting paper, which may be renewed two or three times. The plate should then be reared against a wall in a cool dry place, and left for twelve hours or longer until the paper is evenly and thoroughly dried. If there is no sign of the paper becoming detached, the back of the print may be held for a few minutes before a good fire. If the paper does not begin to curl off, pass the point of a knife just under the edge of the print all round, and by raising one corner it can usually be stripped off without difficulty. Avoid the use of paper which curls and swells much in the washing.

Another plan which I have tried with success is simply to clean the glass with paraffin, and wipe it off as much as possible with a dry cloth. Before applying the print, cover the print with a few sheets of blotting-paper and a book for a few minutes before attempting to squeegee it. The prints often separate before the paper is absolutely dry, and should be at once placed in a book to keep them flat. If the gelatine is very soft from prolonged washing, it is a good plan to let the prints dry face upwards, and then soak them for a few minutes before squeegeeing.

Some specimens of glass are porous, and should be waxed before applying the talc. Polished vulcanite or ferrotype plates may be used instead of glass. I think the prints are less likely to adhere, but I prefer glass plates. With some papers I have found it necessary to employ a common alum bath before fixing.

Mr. Breeze does not say what paper he has been using. I advise him to try Liesegang's aristotype paper for warm tones, or the Ilford printing-out paper for cold ones.—Yours, etc.,
January 30th, 1892. JOHN DIXON.

SIR,—If your correspondent, Mr. J. C. Breeze, will use an alum bath, he need never more have a gelatine print adhere to glass, either polished or ground. The proper time to use the alum bath is after fixing and washing, and the alum itself must finally be washed well out.—Yours, etc.,
JAS. BROWN.

NOTE.—See leader on this subject.—ED. AM : PHOT :

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POSTAL PHOTOGRAPHIC CLUB.

SIR,—Last winter, by means of a letter in your paper, I was enabled to form a Postal Photographic Club, which during the past twelve months has been a great success. Now a new year is commencing the club is being reconstituted and enlarged, and in consequence there is room for a few more members.

The annual subscription is merely nominal, to pay working expenses, and as the chief objects of the club are instruction and recreation, any amateur will be welcomed from any district.

Prints of all kinds are admissible to the portfolios, which circulate monthly with MS. book for notes and discussions.

To any who are desirous of joining I shall be pleased to send rules and particulars.—Yours truly,

HY. E. TREW, A.P.S. (Hon. Sec.)

107, Old Town Street, Plymouth.

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A SHUTTER QUESTION.

SIR,—I have always understood that theorists have decided that the opening of a shutter should be from the centre, and the same applied to its closing. Manufacturers to obtain this end have adopted in several instances the "eye pattern," in which two pieces of metal are hollowed out in crescent form, and these parting gradually in opening, and meeting in closing, place the longest exposure in the centre of the plate, opening from a merely curved slit to the full opening, and *vice versa* as it closes. This is the case in L'Automatique, also in the Chronolux, Secsaw, and other shutters.

I understand, theoretically, this is as it should be; but practically is it so? My experience is that the same movement of shutter would be more effective if the two metal pieces were not shaped at all, but quite straight.

I am led to this belief by observing that in instantaneous work (say, 1-15th sec.) the corners have a considerable area almost uncovered, and they develop so thinly that the prints are black, or nearly so, for a portion of a circle.

Mine is a whole-plate camera, and when I first noticed the defect I blamed the lens; but subsequent test proved this to be a mistake, as in "cap" work the plate always developed equally to the edges. Neither was it the fault of the shutter projecting too far beyond the lens; for, when opened for focussing, the ground-glass was fully illuminated to the corners.

Thinking it out, one cannot but wonder whether it is not a mistake for a shutter to be so shaped, as it must give half as long again an exposure to the centre as to the corners, when the weak point of a lens must naturally be the extreme edges of the plate.

Will some of your readers give their experience?—Yours, etc.,
A. C. N.

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WASHING ARISTOTYPE PAPER.

SIR,—I do not know whether any of your readers have experimented with Aristotype paper (Liesegang's) in the same groove as I have. I have frequently read, wash the prints in "so many waters," "so long and no longer," and consequently determined to put the theory to a practical test. The enclosed print was twenty-three days in several changes of water before toning, duly toned, and transferred to another water bath for another fourteen days, fixed, and again submitted to a distilled water bath for another fourteen days. The gelatine was by this time naturally very soft, and it was a matter of great difficulty to squeegee the print on to a piece of polished glass. I intend putting this subject to a more severe test, and should consequently like to know the experiences of others.

Should you look upon this as a sort of curiosity, on account of the novelty of the experiment, you are at liberty to use the print in whatever way you think fit. Moreover, I pledge my word that the above dates are exactly correct.

A criticism through the "Editorial" as to if the print has suffered for its washing would be deemed a favour.—Yours, etc.,
CYANIN.

NOTE.—The print has not suffered in any way whatever, so far as we can see.—ED. AM : PHOT :

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A SOCIETY FOR THE MIDLANDS.

SIR,—I write to strongly support Mr. Bankart's scheme for the formation of a Midland Counties Postal Photographic Society. I have long been privileged to see and to admire the magnificent work done by Mr. Bankart, and I have profited not less from his criticisms upon my own work and that of others, than from his own photographs and descriptions of his own methods. With Mr. Bankart as the moving spirit, the success of the proposed society is assured.

I write now mainly to urge every earnest amateur in the midlands to send his name and address to Mr. Bankart, West Walk, Leicester, in order that the Society may at once be established.—Yours truly,
W. JEROME HARRISON.

Birmingham, January 29th, 1892.

CAMERA CLUB CONFERENCE.

SIR,—Will you kindly announce that the annual Conference organised by the Camera Club will take place at the Society of Arts, under the presidency of Capt. Abney, during the last week of March next. The arrangements of former years will be slightly extended so as to secure an evening meeting in addition to the day meetings for the reading of papers.

The exact dates and outline of the arrangements are as follows:—Monday, March 21st, 8 p.m., smoking concert and opening of the members' annual exhibition of photographs, at the Club. Tuesday, March 22nd, 3 p.m., opening of the Conference by the President; papers will be read and discussed until 6 p.m. At 8 p.m. the Conference will again assemble and sit till 10 p.m. Wednesday, March 23rd, Conference from 3 to 6 p.m.; annual dinner at 7.30 p.m. Thursday, March 24th, 8 p.m.; special lantern exhibition at the Society of Arts, for members and friends.—Yours, etc.,

G. DAVISON
(Hon. Secretary).

Photographic Procedure.

BY E. J. WALL.

Author of the "Dictionary of Photography."

SECTION IV.

THE DARK-ROOM (*continued*).

OF the appliances used in handling plates or films, and in washing negatives, etc., I shall treat presently, preferring to include them under their separate headings.

Weights and Measures.—Unfortunately, in photographic circles we have a curious medley of methods of expressing formulae. Some writers seem to delight in using weights of uncertain denomination, or rather to which uncertain meaning can be attached. Others, again, are very exact, but there is little unanimity in expressing the weights or volume of the whole formula. Thus it is by no means uncommon to find one formula expressed as so many grains to the ounce, another so many grains to the pint, another in parts, and yet another in some other quantity. On the Continent, and I may say in nearly every country but England, the metric system is in use, and although one or two congresses, conventions, and conferences, etc., have stated their opinion that all formulae should be given in some particular way, we still have the same old sweet confusion.

A few years ago it was customary for chemists to use nothing but what is still called apothecaries' weight, but this is now only used for the compounding of prescriptions, and has never been used for selling chemicals. Possibly it will not be out of place to give a table of the various weights and measures in common use, and also the method of converting one into the other.

APOTHECARIES' WEIGHT.

20 grains	...	...	...	= 1 scruple, written ʒj.
3 scruples	...	...	...	= 1 drachm, written ʒj.
8 drachms	...	...	...	= 1 ounce, written ʒj.

It is rarely that the pound, in this weight, is used, but 12 ounces = 1 pound = 5,760 grains.

AVOIRDUPOIS WEIGHT.

437.5 grains	...	...	...	= 1 ounce, written oz.
16 ounces	...	...	...	= 1 pound, written lb.

There are drachms in this weight, but so rarely used that we may neglect them entirely, still 27.34 grains = 1 drachm, and 16 drachms = 1 ounce.

It will be seen from a comparison of these two tables that whereas the avoirdupois pound is 7,000 grains the apothecaries' is only 5,760 grains; on the other hand, the avoirdupois ounce is 437.5 grains and the apothecaries' 480 grains.

MEASURE OF CAPACITY, OR LIQUID MEASURE.

60 minims	...	...	...	...	= 1 drachm.
8 drachms	...	...	...	...	= 1 ounce.
20 ounces	...	...	...	...	= 1 pint.
2 pints	...	...	...	...	= 1 quart.
4 quarts	...	...	...	...	= 1 gallon.

The U.S. liquid measure is slightly different still, as there are only 16 ounces to the pint, and consequently only 128 ounces to the gallon, whereas the English gallon contains 160 ounces.

The metrical system of weights and measures is far simpler and easier. In this there is one unit, that is for weights, the weight of a cubic centimetre of water at 4 deg. C.; whilst for liquid measures the unit is the measure of 1 gramme of water. It will be seen, therefore, that the two are practically interchangeable, and it is no uncommon thing to find liquids given in grammes.

All the metrical weights and measures are either multiplied by or divided by 10 to make multiples or divisions of the unit weight, and it is therefore far simpler than our English system, and, practically, we may for photographic purposes consider that there are only three metrical weights and measures that we need bother ourselves with, and if we remember these we shall not get into difficulties. They are the gramme, the cubic centimetre, and the litre, which is equal to 1,000 cubic centimetres. We shall see later on the English equivalents, and how to convert the one into the other.

METRICAL WEIGHTS.

1 milligramme	= the thousandth part of one gramme, or 0.001 grm., also written 1 mgrm.
1 centigramme	= the hundredth part of one gramme, or 0.01 grm., also written 1 c. grm.
1 decigramme	= the tenth part of one gramme, or 0.1 grm., also written 1 d. grm.
1 gramme	= weight of a cubic centimetre of water at 4 deg. C. or 1.0 grm., also written 1 grm.
1 decagramme	= ten grammes, or 10.0 grammes.
1 hectogramme	= one hundred grammes, or 100.0 grammes.
1 kilogramme	= one thousand grammes, or 1000.0 grammes, also written 1 kg.

METRICAL MEASURE OF CAPACITY OR LIQUID MEASURE.

1 millilitre	= 1 cubic centimetre, or the measure of 1 gramme of water.
1 centilitre	= 10 " " " " 10 grm. do.
1 decilitre	= 100 " " " " 100 "
1 litre	= 1000 " " " " 1000 "

A cubic centimetre, written 1 c.c. or 1 c.m., is the usual unit.

METRICAL MEASURES OF LENGTH.

1 millimetre	= the thousandth part of one metre, or 0.001 metre, written 1 m.m.
1 centimetre	= the hundredth part of one metre, or 0.01 metre
1 decimetre	= the tenth " " " " 0.1 "
1 metre	= the ten-millionth part of a quarter of the meridian of the earth.*
1 decametre	... .. = 10 metres.
1 hectometre	... .. = 100 "
1 kilometre	... .. = 1,000 "
1 myriametre	... .. = 10,000 "

Kilometre is the only measurement used beyond the metre.

We now come to the question of how to utilise a foreign formula without any trouble. There are certain simple rules and tables published which allow one to at once convert the one into the other, and there will be found below, whilst others are quite content to take everything in parts, and save practically all calculations. The expression *parts* requires some explanation, or at least I imagine so, from the fact that one or two queries as to what is meant by "parts" have appeared in the Query column of the AMATEUR PHOTOGRAPHER. Let us take a typical formula—

* This has lately been proved to be a fanciful, or, rather, incorrect, unit.

Quinol ...	...	...	...	3 grammes.
Sodium sulphite ...	...	...	...	4.5 "
Distilled water ...	...	...	...	500 c.cm.

Now we may read these metrical measures as parts, and say—

Quinol ...	...	...	...	3 parts.
Sodium sulphite ...	...	...	...	4.5 "
Distilled water ...	...	...	...	500 "

In such a formula "parts" may mean grains, drachms, ounces, pounds, so that in compounding this solution we may practically say, weigh out 3 grains of quinol and $4\frac{1}{2}$ grains of sulphite, and 500 grains of water; but as we do not weigh liquids in England, we may assume that 500 grains is 500 minims, or 1 ounce 20 minims. Thus in the same way we may take drachms or ounces in the place of grains. This is not absolutely and scientifically correct, but the error may, I think, be neglected as not likely to influence much the resultant negative.

RELATION OF AVOIRDUPOIS WEIGHTS TO THE METRICAL WEIGHTS.

1 pound ...	...	...	...	= 453.5925 grammes.
1 ounce ...	...	...	...	= 28.3495 "
1 grain ...	...	...	...	= 0.0648 "

RELATION OF LIQUID MEASURES TO THE METRICAL MEASURES.

1 gallon ...	= 4.543,487 litres
1 pint...	= 0.567,936 " or 567.936 cubic centimetres.
1 fluid ounce...	= 0.028,396 " " 28.396 " "
1 fluid drachm ...	= 0.003,549 " " 3.549 " "
1 minim ...	= 0.000,059 " " 0.059 " "

RELATION OF THE METRICAL WEIGHTS TO THE AVOIRDUPOIS WEIGHTS.

1 milligramme ...	...	...	= 0.015432 grains.
1 centigramme ...	...	...	= 0.15432 "
1 decigramme ...	...	...	= 1.5432 "
1 gramme ...	...	...	= 15.432 "
1 kilogramme ...	...	...	= 15432.348 "

(or, 2lb. 3oz. 119.8 gr.)

RELATION OF THE METRICAL MEASURES TO THE LINEAL MEASURES.

1 millimetre ...	= 0.03937 inches.
1 centimetre ...	= 0.39371 "
1 decimetre ...	= 3.93708 "
1 metre ...	= 39.37079 " or 1 yard 3.7 in.
1 cubic centimetre ...	= 15.432 grain measures = 16.8 minims.
1 litre ...	= 1 pint 15 oz. 2 drms. 11 minims.

Practically we may consider

1 gramme...	= 15 $\frac{1}{2}$ grains, or 15 $\frac{1}{2}$ grains.
1 cubic centimetre ...	= 16 $\frac{1}{2}$ minims, or 17 minims.
1 litre ...	= 35 $\frac{1}{2}$ ounces.

Innumerable rules and tables have been given for converting the one into the other. If we have a formula in English measure, is it always advisable to convert it into metric measure of some definite volume. Thus it is usual on the Continent to write all formulæ in 100, 250, 500, or 1,000 grammes or cubic centimetres, and this should also be adopted in the conversion of the one system into the other. For example, let us take the following formula:—

Quinol ...	...	...	...	120 grains.
Metabisulphite of potash ...	...	...	...	250 "
Water ...	...	...	...	20 ounces.

To convert these directly into metrical measure does not give us an even result, thus—

Quinol ...	...	...	120 grains = 7.776 grammes.
Metabisulphite ...	...	...	250 " = 16.2 "
Water ...	...	...	20 ounces = 567.936 c.cm.

But if we utilise the following rules we shall get a better result:—

To convert either grains per 20 fluid ounces to grammes per 500 c.cm., or grains per 10 fluid ounces to grammes per 250 c.cm., or grains per 1 fluid ounce to grammes per 25 c.c.; multiply the grains by .057 in each case.

Example—

120 grains × .057 =	6.84, or 7.0 grammes.
250 " × .057 =	14.25 "
Water ...	500 c.c.

To convert either grains per fluid ounce to grammes per 1,000 c.c. multiply the grains by 2.29; per 500 c.c., multiply the grains by 1.14; per 100 c.c., multiply the grains by .229.

In converting English weights into the metrical, minute fractions may practically be ignored. Another method suggested by M. Warnerke of converting an English formula into approximately correct metrical formulæ, is to multiply the number of drachms by 60, and the number of ounces by 480. Taking Barker's gelatino-chloride formula—

Gelatine...	...	...	...	175 grains.
Ammonium chloride ...	...	...	...	18 "
Rochelle salt ...	...	...	...	50 "
Silver nitrate ...	...	...	...	75 "
Alcohol ...	...	...	...	4 drachms.
Water ...	...	...	...	5 ounces.

Converted by the above rule we get.

175 parts or grammes.	
18 "	
50 "	
75 "	
4 × 60 =	240 parts or cubic centimetres.
5 × 480 =	2,400 " " "

Reviews.

Congrès International de Photographie, Vœux, Résolutions, et Documents. Gauthier-Villars et Fils. Quai des Grands-Augustins, Paris.

M. Pector, the permanent secretary of the Congress, sends us the work before us, which contains the summary of the votes, resolutions, and papers of the 1891 meeting of the Congress. We have already reviewed the former volume of the report, and this will form a fitting companion to it.

Recettes Photographiques. By Abel Buguet. Second series. Published by the Société d'Éditions Scientifiques. Placo de l'Ecole de Médecine. 4, Rue Antoine Dubois, Paris. Price 2 fr. 50.

This is an extremely useful little work of about a hundred pages containing 300 receipts, formulæ, and processes suggested by various writers in the photographic journals, both English and foreign. The work is well printed in clear type, and so far is very free from errors.

Verzeichnis der von der k. k. Akademie der Wissenschaften in Wien herausgegebenen und derzeit vorrätigen Schriften. Published by F. Tempsky Tuchlauben, 10 Wien 1.

A very complete and useful catalogue and price list of all the published treatises of the Academy of Vienna. It possesses considerable interest to our German-reading photographers, because there alone will sometimes be found the full text of some important paper on photography.

The Photographer's Indispensable Monthly, published by Adams and Co., of Aldersgate Street and Charing Cross Road, appears now for the first time this year under new editorial management. Six pages are devoted to literary matter, grave and gay, written in a bright, lively style, which, though here and there giving a sly dig at well known men and things, is not calculated to hurt anybody's feeling. The remaining six pages are filled with advertisements of the leading novelties just introduced or about to be introduced. The most striking novelties are Adams' Torsioscope, which we don't intend to give any information about here, as we shall shortly have one to notice; the "Adams" hand-camera, a private glance at which we have already had, and which is a good, capital instrument, and a cheap 50s. hand-camera; and the Otto, "possessing as many good points as a porcupine." Messrs. Adams and Co. will send us their novelties in due course, but those anxious to see for themselves had better obtain a copy of the *P. I. M.*, which is sent or given free to all.

Instruction in Photography. By Captain W. de W. Abney, C.B., R.E., D.C.L., F.R.S. Published by Piper and Carter, 5, Furnival Street, Holborn, E.C. Ninth edition, price 3s. 6d.

It is hardly necessary for us to do more than acknowledge from the publishers the receipt of this work, it being so well known as one of the standard photographic works. In the new edition the author has brought the matter up to date, and gives us the latest information on photographic processes. It is well printed and illustrated by numerous explanatory diagrams.

Elementary Photography.

BY JOHN A. HODGES.

CHAPTER II.—THE LENS.

Preliminary Advice—A Good Lens Essential—Different Lenses Described—The Single Lens—The Rapid Rectilinear—The Wide Angle Rectilinear; its Special Feature—The Portrait Lens—Definition of Terms—Focus—"Stops" or Diaphragms—Waterhouse, Iris, and Revolving Diaphragms Described—The Use of "Stops"—Aperture of a Lens—Distortion—Angle of View; its Determination—Examples—Practical Advice on the Choice of a Lens—English Makes Preferred—Cheap Foreign Lenses—Cost—The Use of the "Wide Angle" Lens—The Care of the Lens—Practical Hints on the Preservation of Lenses.

THE lens, without doubt, is the most important part of the photographer's equipment, and it is essential that he should provide himself with a good one. He may contrive, with some personal inconvenience, to turn out satisfactory work with a faulty camera, but with an indifferent lens he can never hope to produce good pictures.

I do not intend to perplex the novice by attempting to lure him into the study of photographic optics, yet it will

be well for him to acquaint himself with the different forms of lenses in general use, and the special purposes for which they are constructed. I intend, therefore, to deal with the subject solely from a practical point of view, and to eschew theory entirely.

There are only three varieties of lenses in ordinary use with which the beginner need trouble himself, unless, indeed, he should aspire to portraiture, when another form of lens must be added. These consist of the single landscape lens, the rapid

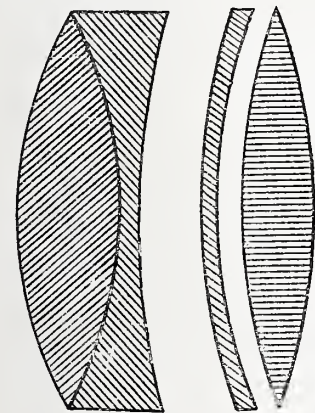


FIG. 3.

rectilinear, the wide-angle rectilinear, and if portraits are to be taken, the portrait lens. I will now briefly describe the special features of each.

The form of the single landscape lens is shown in fig. 5, which is a sectional drawing. The advantages of this lens are its cheapness, and its suitability for general landscape work; its disadvantages being its slowness compared with the rapid rectilinear, and the property it possesses of causing the straight lines in a building to appear in the photograph slightly curved. Although the beginner is frequently recommended to select this lens for his first experiments in photography, I think the next lens which I shall describe, namely, the rapid rectilinear, is far more suitable. This lens, the sectional view of which is given in fig. 4, is in more general use probably than any other. It is many times more rapid in action than the single lens, and can, therefore, be used for taking portraits and groups, as well as for instantaneous views. It is a non-distorting lens, and

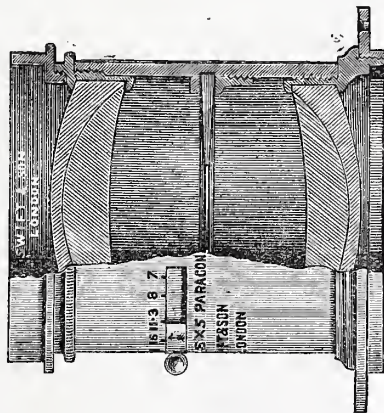


FIG. 4.

will not produce the curvature of straight lines which was referred to as being a fault inherent in the last-named lens. The third lens on our list—the wide-angle rectilinear—shown in fig. 6, is also a non-distorting lens, and its chief

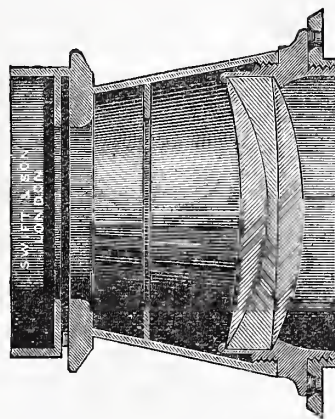


FIG. 5.

feature, as its name indicates, is the power which it possesses of including in the picture taken with it a very large angle of view. It is not so generally useful as the rapid rectilinear, both on this account and also because its rapidity is considerably less, but, where a second lens can be afforded, it is the one that should be chosen, as it is extremely useful for certain classes of work, notably the photographing of architecture, both interior and exterior, when

it is often desirable to include a large portion of the subject in the picture. The portrait lens (fig. 3), as its name implies, is intended for portrait work only. On account of its construction, it is suitable only for that special work, and cannot be used for any other, and as it is an expensive lens when properly constructed by a maker of repute, the tyro will do well not to be tempted to purchase one unless he intends to make portraiture a special study.

Before we can intelligently further discuss the pros and cons of different forms of lenses, it will be necessary to define the meanings of certain technical terms to which it will be impossible to avoid reference.

The *focus* of a lens is the distance between the lens and the ground glass when the image appears sharply defined thereon.

The *stops* or *diaphragms* are the plates of metal with which most lenses are fitted, which, when inserted in the slot in the lens mount provided for the purpose, contract, or reduce the aperture of the lens. It will be easily understood that the smaller the stop which is inserted, the slower will be the working capacity of the lens, and consequently the longer the exposure necessary. Instead of the perforated plates of metal, or Waterhouse diaphragms, just described, the lens may be fitted with what is known as the Iris diaphragm (fig. 7), which consists of a series of thin metal plates overlapping each other, arranged concentrically within the lens mount. By simply rotating a ring fixed to the outside of the lens mount, any sized opening may be obtained at will. This form of diaphragm possesses several advantages—being attached to, and forming part of

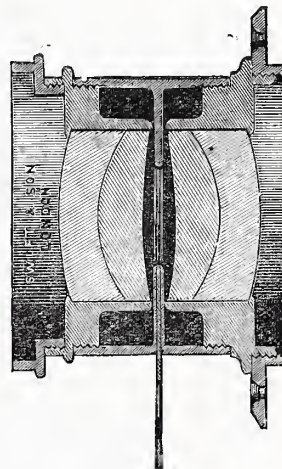


FIG. 6.



FIG. 7.

the lens, it is not possible, as sometimes happens with loose stops, to either lose them or leave them at home. Most opticians now supply their lenses fitted with either form of diaphragm, and although the Iris diaphragm is rather more expensive than the Waterhouse diaphragm, I strongly advise the tyro to choose the former. There is yet another kind of diaphragm to which reference has not been made. It is called the "rotating" diaphragm, and consists simply of a circular plate, in which different sized openings are cut. It is, like the Iris, permanently attached to the lens, and by simply causing it to revolve any sized opening can be brought into the centre of the lens. It is generally only fitted to two classes of lenses, namely, the simple landscape lens and the wide angle doublet.

The object of using stops is to increase the defining power of the lens. If we examine the image thrown by the lens on the ground-glass, we shall find that although some portions of the picture appear sharply defined, or, as a photographer would say, "in good focus," the rest of the picture is more or less blurred. To remedy this, we insert a medium-sized stop, and we now see a great change in the appearance of the image, which, instead of being blurred and fuzzy, appears sharp and distinct. I shall have more to say upon this part of the subject when I assist the reader in taking his first negative.

The *aperture* of a lens is the diameter of the stop used in relation to the focal length of the lens, and the size of the diaphragm is usually expressed by dividing the focal length of the lens by the diameter of the stops. For example, we will suppose a certain lens has a focus of 8 in., and we find, upon measurement, that the largest stop measures 1 in. in diameter. $8 \div 1 = 8$, therefore the aperture of the lens with that particular stop will be $f/8$, and so on. The stops of nearly all modern lenses are marked according to this system, therefore, although it is necessary that the beginner should understand their meaning, he will not have the trouble of making the calculation for himself.

Distortion is the defect in single lenses, and improperly constructed doublets, which causes straight lines in the object photographed to appear curved or distorted in the picture.

By the term *width of angle* is meant the amount of the subject photographed which the lens will include upon the plate. The rapid rectilinear lens which we have advised the student to purchase is what may be called a medium angle lens, and the pictures produced by it, when it is used on plates of the size which I shall recommend, do not suffer from that appearance of exaggerated perspective which is sometimes seen in photographs taken with wide-angle lenses. The width of angle of any lens is determined by the length of its focus in relation to the length of the base line of the picture. For example, an angle of 28 deg. is obtained on a plate one-half the focal length of the lens, an angle of 37 deg. on a plate which is two-thirds the focal length of the lens, an angle of 53 deg. on a plate the same length as the focus of the lens, and an angle of 74 deg. on a plate which is one and a-half times the focus of the lens—and so on.

I have already intimated that it is most important that the lens selected should be a good one, and I strongly advise the reader not to attempt to economise by buying a cheap and possibly inferior instrument. His safest plan will be to deal direct with an English lens *maker*, not a *dealer*, of whom there are several from which to choose. He should also be informed that there are vast numbers of foreign lenses imported into this country by photographic dealers who engrave their names upon the mounts, and the novice may easily but erroneously infer that the instruments are manufactured by the firms whose names they bear. Now I

do not wish for a moment to disparage instruments of this class; many of them are most excellent, but, on the other hand, some are utterly worthless. I have frequently met with cheap foreign lenses which, for practical purposes, were equal to the best of English manufacture, but there is always the chance of getting a bad one, whereas if an English maker of repute be dealt with, *he* will take care, for the sake of his own reputation, that he does not issue an inferior instrument. As a rough guide on the question of cost, I find that the average price, less cash discount, of a half-plate rapid rectilinear, with iris diaphragm, charged by either Beck, Crouch, Swift, Taylor and Hobson, or Wray, is about £3 10s. With such a lens the beginner may rest content until he has acquired some proficiency, for with it he can take either landscapes, buildings, or even his "sister, cousin, or aunt"—though, if he be wise, he will not attempt the latter until he can with some degree of certainty produce presentable reproductions of the two first-named classes of subject. He will then probably begin to find that there are certain occasions when his rapid lens does not give him a sufficient amount of the subject on the plate, as, for instance, when circumstances compel him to approach very near to a building. For this purpose, and for photographing interiors, it is often necessary to use a short-focus, or wide-angle, lens, and in buying such an instrument all the foregoing observations made in reference to the rapid lens, apply with equal force. Therefore, if a second lens can be afforded, it should be, for use on a half-plate, one of the wide-angle type of about 5 in. focus.

Being in possession of a good lens, the amateur should take proper precautions to preserve it from injury. Every lens as sent out by the maker is provided with a leather cap with which to make the exposure; this, however, in the case of a doublet, only serves as a protection for one of the glasses, and to preserve both from injury a little wash-leather bag, made double and padded with cotton wadding, should be made to contain each lens. The glass of which the lens is constructed is very highly polished, and although it is necessary, for the success of the photograph, to keep the surfaces free from dust, yet great care must be taken not to use any material which would cause scratches. If the lens is fitted with the iris diaphragm it will never be necessary to unscrew the glasses to clean their inner surfaces, as dust will seldom find an entry through that form of diaphragm, and when it becomes necessary to clean the outer surfaces, a piece of the finest chamois leather should be cautiously applied, taking care to apply it very lightly and with as little rubbing as possible.

(To be continued.)



Putney.—A meeting was held on the 30th ult., Rev. L. Maedona in the chair. The first part of the evening was devoted to a demonstration of the new film enlarging method—Cresco Fylma—of Messrs. Hill Bros. and Freeman, Victoria Road, Surbiton, who, besides having on view numerous prints and opal enlargements, which were freely criticised and commented upon, demonstrated practically the few manipulations necessary to produce the enlargement. The process, which is thoroughly worth a trial, while working more readily with transparencies, was also most satisfactory in the case of negatives, the gradual growth of the film being very remarkable. Contrary to expectation, no particular care is necessary either in the transfer of the film or in any of the subsequent operations. Mr. A. R. Dresser, being unfortunately invalidated, had kindly sent a written paper on "Hand-Cameras" (second lecture of the series on "Photography"), which having been read by the Chairman, a large number of fine enlargements from quarter-plate hand-camera negatives were handed round. These were mostly on Fry's "Roughest" (late "Naturalistic") bromide paper, and toned with uranium. Following these some eighty slides, instantaneous, were thrown upon the screen, all being thoroughly appreciated and admired. A set of American slides brought by Mr. A. Ovey concluded a pleasant evening.

Celluloid Films.*

By J. Désiré ENGLAND.

For many years past it has been a great aim in photography to substitute a lighter material than glass as a support for the sensitive film for negatives, and until the introduction of celluloid no substance was found to be capable of supplanting glass for the purpose.

Celluloid, a new material in the arts, dates back to about the year 1869. It is a hard, durable substance, almost entirely unaffected by acids and alkalis, unchangeable under ordinary atmospheric conditions, and is very tough. It is rendered plastic by heat, and can be moulded into any desired form. Alcohol and acetic acid act upon it, partially dissolving it. It is soluble in acetate of amyl, forming a useful, quick-drying varnish. It is manufactured in a variety of forms. Imitations of tortoiseshell, amber, and malachite are produced which defy detection very often. The sheet imitation of ivory is used in photography as a basis for positives. The variety, however, which concerns us mostly now is the transparent kind which is manufactured in sheets 1-100th of an inch in thickness, and which has a surface like glass. It is as clear, and, like glass, is not affected by moisture, which, of course, is a very great desideratum for our purpose.

The manufacture of celluloid sheets is somewhat as follows:—A pile of pure white paper is acted upon by nitric and sulphuric acids, converting it into nitro-cellulose. It is washed to free it from the acids, and then treated with wood spirit and camphor, producing a jelly-like block, which is then subjected to great pressure, which is sustained for several weeks. The block, from which most of the spirit is evaporated, is put into a machine something like a planing machine, and is cut into shavings of the thickness of the film required; each shaving or sheet of film, which measures 50 by 20 inches, is hung up to dry for a period of about three months, in order to thoroughly season it and prevent any after change. Each sheet is then taken and rolled under great pressure between heated metal plates, to obliterate the marks of the cutting-knife. If one takes a piece of celluloid and moistens it with alcohol, one can see very distinctly the lines caused by the knife. The metal plates are either polished or grained, according to the surface required, the polished giving the smooth film, and the grained the matt surface. Both kinds are used, but I certainly prefer the smooth. Some makers of negative films coat the matt film, leaving the matt surface at the back. It is no doubt very good for retouching, but the negatives take longer to print, and also the matt surface is very liable to become scratched. The gelatine emulsion is spread over the sheets by means of special appliances, which produces a film of gelatino-bromide of silver of great uniformity. The emulsion is the same as that used in the preparation of dry plates, and the film when dry is precisely the same as a glass plate, with the exception that the support is celluloid instead of glass. The great advantage of celluloid films is of course the lightness and portability; a dozen half-plate films weigh about 4 oz., while the same number of glass plates will average 3lb., whilst in thickness one gross of films will occupy 4 in., and one gross of glass plates about 14 inches. Another great advantage is that there is no fear of breakage. Halation, too, so common with glass plates is almost entirely obviated by the use of films.

The films can be kept flat for exposure in the dark slide by several means. For small sizes a piece of dark card

placed at the back will be found sufficient; this applies only to slides in which the rebate is not cut away for the stop of the shutter, as in the slide I have here. The most useful contrivance, however, is this film carrier, which consists of a card with light metal grooves at the ends. They are very effective, light, and inexpensive. For very large sizes the plan adopted first, I believe, by Mr. Warnerke consists of sticking the films upon a surface which is always tacky. This method is a very good one, but care must be taken to keep dust from the surface. In my own practice I usually employ carriers which are curved. I find there is great advantage in using curved films when the full aperture of the lens is employed, as it very materially aids even definition. The exposure required is the same as that for glass plates. I have found that there is no difference whatever whether the emulsion is coated upon glass or celluloid.

For development any of the usual developers are suitable, and the films will lie flat, provided that the bottom of the dish is first wetted. It is not necessary to wet the film previous to development, except for larger sizes. They are fixed in the same manner as glass plates, but care must be taken that the edges do not curl up out of the solution and thereby escape fixing. The films when fixed are well washed, and then hung by one corner to dry. I find the small clips used for fastening neckties useful for drying. Several clips can be threaded on a line and several films dried at a time. The negatives can be reduced or intensified without difficulty by any of the well-known formulae, and easily be varnished by means of a varnish which does not require heat in drying, such as amber in chloroform. Celluloid varnish may be used. These varnishes are best applied by means of a brush. A very good varnish may be made by thinning gold size with benzole, but it takes rather a long time to dry. A simple plan, however, which I have lately tried, and which seems to be simple, and at the same time very effective, is to dip the film after washing and before drying into a water varnish consisting of pale shellac dissolved in an aqueous solution of borax. This dries with a very hard, impervious coating.

There are many useful applications to which celluloid may be applied. In Meessard's Cylindrograph, which takes panoramic pictures two or three feet in length, the films are inserted in a slide which is bent to form the segment of a circle. Another useful application is in making stereoscopic pictures. The stereoscopic negatives can be cut with a pair of scissors, and the halves transposed and mounted upon glass, when the prints taken will not then require reversing. Very good cloud negatives can be made with the films, which can be printed from either side. In cases where reversed negatives are required for carbon printing or collotype, a celluloid negative will be useful, and although one does not get absolute sharpness by printing in the ordinary manner, it can be much improved by placing the frame containing the negative at the bottom of a box, so as to cut off all the oblique rays of light. By this means one can get sharp pictures. For focussing screens, too, the matt celluloid forms an excellent substitute for the ground glass.

I should like to give a word of caution as to storage of negative films. They should be kept, like plates, in a dry place, away from gas fumes, and above all, the films should not be subjected to too much pressure. On account of their being unbreakable, one is very apt in travelling to pile a great many things upon them, and this is often the cause of peculiar insensitive markings upon the negative. Capt. Abney has pointed out that the effect of pressure upon a gelatino-bromide film is to destroy sensitiveness in the parts pressed. In conclusion, I hope the few hints I have given will prove of service during the coming season, when no doubt celluloid films will be very extensively used.

* Read before the West London Photographic Society.

The Actinograph.

By F. HURTER, PH.D., AND V. C. DRIFFIELD.

(Concluded from page 85)

IN use the actinograph is extremely simple. All the photographer has to do is to set the light scale to the date and the point on the lens scale which indicates the lens and diaphragm about to be used to the curve indicating the hour on the light scale. The "speed index" is next set to the speed of the plate, and it only remains to select the exposure indicated which most closely agrees with the atmospheric conditions at the precise moment of making it. The exposure so found will be that required for an "ordinary" landscape.

The actinograph is provided with a table of factors which are used in the calculation of exposures in portraiture, interior work, etc. Suppose, for example, it were wished to take a cloud negative. The factor for this is 1-10th, which means that the necessary exposure is 1-10th of that required for an "ordinary" landscape. In this case it is optional whether 1-10th of the indicated exposure be taken, or whether the plate be assumed to be ten times as rapid as it really is, the speed index set accordingly, and the indicated exposure be taken as it stands.

It is far too much the fashion with photographers who have made any mark, to condemn and despise all aids in the calculation of exposures. They would make one believe, in spite of the enormous variations in the speed of plates all bearing the same brand and possibly the same sensitizer number as well, that, with experience, some kind of mysterious intuition will guide one to the correct exposures. Even, however, if we could, by comparing notes of previous exposures, or by any process of mental reasoning, arrive at the correct exposure, why trouble the brain when a machine will do the work better? The light to-day is, apart from atmospheric influences, precisely what it was this day last year. The professional photographer who exposes plates throughout the day and all the year round may possibly find his experience a sufficient and ready guide; but the case is very different with the amateur who only occasionally exposes a plate. The very fact that photographers demand a developer which will remedy errors in exposure argues their inability to expose correctly.

We are aware that many photographers would prefer an actinometer, or direct means of measuring the light, rather than the mere provision of data for calculating what that light must of necessity be; and, if it were possible accurately to measure the light at the precise moment of making the exposures, no doubt our actinometer would be preferable. But as the light is liable to sudden fluctuations, and as an actinometer records the light as it was some time previously, we have found it better to rely upon the actinograph, by means of which the condition of the light may be ascertained at the precise moment of making the exposure.

In conclusion we should like to lay stress upon the importance we attach to correct exposure. A negative cannot possibly be technically perfect unless it has received such an exposure as to yield gradations which truly represent the different light intensities which it received. In under or over exposure these gradations are false; they are once and for all determined by the action of the light, and no after treatment in development can possibly correct a false relationship between them. We hope the time is at hand when more care will be taken to secure correct exposures, and less energy be wasted in vainly attempting to remedy false ones. We have incurred a considerable amount of ridicule for insisting as strongly as we have done upon the paramount importance of correct exposures, but we are convinced that this will soon be recognised as a primary and indispensable condition in the production of a technically perfect negative.

Carbon Printing.*

By GEORGE BANKART.

I FEAR it may be thought an old story, and to some extent an obsolete process for producing photographic prints, and it is older in point of date than the platinotype, bromide, or gelatino-chloride processes, but I think it can hold its own with any process in existence, in the important points of delicacy and gradation of tone, and especially as regards the richness and transparency of the shadows.

On this particular point I think carbon surpasses all other processes. You know that it is easy to bury the delicate detail of the darker shadows in a dense deposit, when printing in bromide or platinum, but the peculiarity of carbon printing is that no matter how deep the shadows may be, if there is fair detail in the negative it will show in the prints, because the shadows consist of varying thicknesses of gelatine tissue, and there is always atmosphere and transparency in them.

I would call your attention for a few minutes to the more conspicuous points of the process as regards its advantages and disadvantages compared with other known processes—and I take it for granted that you all know the rationale of working in carbon tissue.

I have known the working principle of the process for many years past, but I always had an idea that it was a dirty, messy, sloppy process which required an unlimited supply of hot water, and I purposely neglected it because I could not see my way to make any provision of such supply, but after trying pretty well all the known printing methods, and being dissatisfied with most on account of the want of permanency of some, and the difficulties attendant on the perfect working of others, I resolved at last to see the carbon process as worked by the Autotype Company of London, and the simplicity of it was so striking that I at once took it up, and I think it combines most of the good points one desires in a photograph, and avoids the disagreeable after-work of long washing and soaking of prints to eliminate any salts left by fixing agents.

The advantages of carbon are: (1) Permanency. There can be no doubt on this point if care is used in adding pigments of undoubted permanence to the gelatine tissue, and there are so many absolutely reliable pigments available that we may dismiss all anxiety on that point. The film of gelatine in which the colouring matter is suspended is not only rendered insoluble in very hot water by the action of light, but is afterwards subjected to the tanning action of alum, so that it may be considered to be doubly treated in a way to render it permanent as a means of enclosing and preserving the colouring matter which forms the picture.

(2) There is no need for any inspection of the print during exposure in the printing frame. The time is ascertained by an actinometer, consisting of a strip of sensitised silver albumenised paper compared with a tinted ground, and, therefore, there is no risk of fogging the print by repeated examinations of its progress in a weak light. This may possibly be thought an objection and a source of difficulty, but, though it requires the experience of a first print from each new negative to determine the correct actinometer exposure, when it is once determined, and a memorandum made of it, all future printing from that negative becomes a certainty, and you may produce without mistake any number of after-prints so long as you work accurately by the actinometer.

I always expect to have only an approximately correct print from the first piece of tissue exposed on any new

* Read before the Birmingham Photographic Society.

negative, as no one can tell by examination what the vagaries of every negative may be the first time of using. It may require longer or shorter exposure and more "blocking out" of certain parts than at first sight might be expected, therefore I put it down as one of the disadvantages of the process that the first print from a new negative must be regarded as a tentative proceeding, and the subsequent prints from such negative must be guided by the experience gained from the first trial.

As soon as I know the correct actinometer exposure, I write it on the back of the negative in the clear rebate margin with a writing diamond, and it is always at hand for reference, and it may be relied on as an unfailing guide for future work.

(3) COMFORT AND CONVENIENCE IN WORKING.

All who have printed by bromide or Alpha paper will have felt the discomfort of having to work in a red or orange light and the difficulty of estimating the exact pitch to which development has arrived, and the correct time to stop; but in carbon work it is widely different. The tissue when moistened for development becomes comparatively insensitive to light, and it is possible to work in a fairly good diffused daylight or by a very strong gaslight without risk of fogging the image, and it is an immense comfort and convenience in judging of the critical state of the print to be able to use a strong light and see so perfectly what one is doing.

(4) CONVENIENCE IN OBTAINING MATERIALS.

The tissue can be had freshly sensitised twice a week from the Autotype Company, and travels well by parcel post sent out in cut pieces of the exact size required for any negative, and it is ready for use at once, or you can have it sent in rolls, and cut it up yourself; but in this state I find there is some danger of cracking the face of the film in unrolling it ready for cutting up, and the system of cut pieces is most convenient. The chief drawback to carbon tissue is that after sensitising it will only keep in good working condition for a short time, say about twelve or fourteen days, if kept in a dry condition, so that it is advisable to use it up as promptly as possible, or to order only as much at one time as can be used up with any series of negatives within a fortnight, but it is just here that the convenience of obtaining it in cut pieces twice a week comes in, as the postage is light on it.

I have some experiments now in progress, by which I hope to find that it may be kept longer, if not indefinitely. It has been stated that gelatine when sensitised by bichromate salts becomes insoluble in course of time only in the presence of moisture, and it would seem feasible that if all moisture is extracted by storage in a chloride of calcium tube, such as is used for platinum paper, it might be expected to remain in good printing condition as long as dryness is maintained. If so, it will be a great convenience to be able to keep tissue longer; if not, we shall be in no worse position than at present.

Of course, such dessicated tissue must be allowed to absorb moisture to a normal extent by being placed in a dark and damp cellar for a short time before use in the printing frames, and as it is very hygroscopic it will rapidly absorb sufficient moisture.

The only disadvantage of a serious nature in carbon printing I am aware of is the action on the skin of the solution of bichromate, which has a known poisonous property if too long in contact with the hands. The warm water necessary for the solution of the gelatine in development renders the skin very absorbent, and the salt after a time creates considerable irritation resembling "chapped

hands," due to cold weather, and in aggravated cases it strongly resembles eczema, with great itching and smarting of any cracked portions of the skin. On questioning the employes of the Autotype Company on this point, I found considerable variation. Some in constant use of the tissue were not affected by it, others were attacked in the way indicated; it appears to be partly constitutional tendency to it or otherwise. In my own case I worked the process for nearly a month before I found any inconvenience, then the irritation commenced, and I had to leave off for a time, and by the use of vaseline pomade it soon ceased, and I then adopted stout india-rubber gloves for use in development, and have not had the least trouble since; in fact, the use of india-rubber gloves is pleasant and beneficial, as they act like a Turkish bath, and keep the hands in nice order if washed in soap and water after work. I therefore strongly advise any one who takes up carbon printing to avoid the unpleasant consequences of contact with bichromate solutions by the use of india-rubber gloves.

Carbon printing may be divided into three stages.

Suppose that the requisite number of pieces of tissue have been exposed on the negatives.

First, they are slightly soaked in cold water and squeegeed down upon some temporary support for development.

Secondly, after remaining for a time in contact under slight pressure the tissue and supports are placed in warm water, and when thoroughly soaked the outer skin of paper is peeled off and thrown away, leaving the print on the face of the support, but buried in a mass of dirty gelatine, which has to be washed away to expose the true print and which, when cleared from all insoluble gelatine, shows a reversed print on the temporary support.

This is placed in a solution of alum to harden the gelatine and extract any trace of bichromate which may be left on the film. This shows a perceptible tint in prints developed on a flexible support; but is almost invisible when working on opal glass. After a wash in water to extract alum, it is dried and completed.

Thirdly, the reversed image has now to be transferred to its final support of paper or any other material which may be desired. The print on the temporary support and the paper for transfer are placed in warm water and brought in contact, squeegeed together, and allowed to dry spontaneously, when the picture will leave the support of its own accord and become firmly attached to the paper, and is ready for mounting in the same way as any ordinary silver print. That is the process known as the "double transfer," but where reversed negatives can be made, or ordinary negatives can be stripped from the glass and printed from the reverse side, or where film negatives are used, the process is more simple and expeditious, because the tissue can be squeegeed at once upon its final support paper, and when developed and dried is finished, but in such case the gelatine is exposed on the surface of the print, and the general effect is a glazed surface, somewhat resembling lightly albumenised paper, and you fail to obtain the perfectly matt surface which results from the double transfer upon smoothed opal or ground glass, which has been previously waxed, when the print shows a softly-grained matt surface, which is exceedingly like the face of a platinotype print.

The final result, as regards face of print, depends entirely on the surface of the temporary support. If such support is a sheet of polished glass previously waxed and coated with collodion, the result will be a highly polished enamelled print, but if, as I shall show to-night, the support used be of smoothed opal glass the result is a beautiful matt surface, and I consider that there is no form of carbon printing which is so convenient to work, and so delicate in

finish as this, and that it fully repays for the slight extra trouble of working the double transfer process.

Of course, the tissue can be squeegeed at once upon opal glass, developed, and dried upon it, and thus becomes a fixture which can only be got off by some grinding process, but will be a reversed print, unless it is developed on some flexible temporary support, (such as is supplied by the Autotype Company), and then transferred to the opal.

I will now proceed to the first portion of the process, and attach to the opal glass the tissue I have exposed to-day, and whilst the water bath is being raised to the necessary temperature I will make a few more remarks.

Now, there is just one critical point in this attachment to the opal. It is necessary to watch very closely the state of expansion of the tissue. If squeegeed down too soon it will not lie flat, and if left to soak too long the adhesion will not be perfect and is apt to strip up and come away from the support in taking off the paper, or in development. If the tissue is fairly dry, on contact with the water it has a tendency to curl inwards towards the gelatine. As it absorbs moisture it flattens out, and if left long enough will eventually curl outwards, but it must be taken at the moment when it is just flat enough to lie evenly on the support, and before it curls outwards, when the attachment is perfectly safe for the after operation. I prefer to work in a tank of sufficient size to take two prints, one to soak the paper off and one to go on developing, as time is thus saved. Indication of the softness of condition for stripping is seen by the oozing of the gelatine from the edges, and sometimes of blisters forming between the paper and support, but care must be taken not to attempt to strip it too soon or the print may be lifted from the support and spoiled.

The Autotype Company, in their manual, advise the temperature of the water for development to be raised to 100 deg. to 110 deg. This may be all right for tissue which is attached to a final support of gelatine paper, as the adhesion is very strong, but in using a fine-grained waxed support I find a great risk of blistering the tissue, and that a temperature of 96 to 100 deg. is much safer and better though somewhat slower in action, but I find it produces better half-tone, as there is less tendency to boil away the delicate skin of gelatine where it is at its thinnest texture, viz., in the high lights and lighter half-tones.

90 degs. is described on the thermometer as "warm water," and 106 deg. as "hot water," and I find it becomes unpleasantly hot to the hands inside of india-rubber gloves when it gets up to 110 deg.

As regards speed of printing and working compared with other processes, I find it pretty quick working, decidedly quicker than ordinary sensitised albumenised paper. In the rather poor daylight of December and January, working in the shade of a building, the average time of exposure in the printing frame seems to be about twenty minutes for each "tint" of the actinometer required, i.e., that is, for a negative requiring two actinometer tints forty minutes, one requiring four tints an hour and twenty minutes, but in the brighter weather of summer and with white fleecy clouds in the sky, the time will be reduced to half that. I am convinced that in dull weather, in the best part of a winter day, it is comparatively easy to make prints from dense negatives in an hour and a half which would take a whole day, or even two days, with platinotype or weakly silvered albumenised paper.

Speed of work in development will depend mainly on one's appliances and method of working, but in my own case I can develop and finish off half a dozen 12 by 10 prints (including the time taken to heat the water to 96 deg.) in an hour and a half.

Perhaps it may interest you to know something about the cost of production, and I consider carbon work one of the cheapest processes we have, provided no waste prints are made, but as the element of waste is common to all processes if sufficient care is not observed, carbon work is not singular in that respect; as I said before, when once the correct actinometer time has been ascertained by experiment, all subsequent prints from that negative ought to be a certainty, and therefore, no waste prints ought to be made. I find for my size of print (11 by 9) the cost of production (apart from waste) is about 3s. 6d. per dozen. There is no chemical required except alum, and that is so cheap as to be outside of calculation; only hot water is needed, and the glass supports can be used over again indefinitely if care be taken against breakage. Calculations made for whole plate and half-plate negatives should come at about 2s. and 1s. per dozen, but ought not to exceed 2s. 6d. and 1s. 6d. respectively. Those who work much in bromide or platinotype at present prices can tell for themselves what difference they find.

Finally I may say that I find the Autotype Co. very obliging and attentive to one's wants in prompt supply of tissue by return of post, and by answering any questions as to difficulties beginners may experience in their early attempts, and I think that if you will give the process a trial you will be so pleased that you will probably take it up with as good results as any other process you may have tried. To me one great point of its appreciation is the knowledge that the prints are permanent, as beautiful in quality as platinotype, and at far less cost of production.

Apparatus.

WORMALD'S ANTIPIHON.

UNDER this title Messrs. Wormald and Co. have introduced a very necessary adjunct of the dark-room, viz., a cheap and efficient ventilator which can be affixed either to wood, brick, or stone. It strikes us as being well and substantially made, and certainly if, as the makers recommend, two of these ventilators be affixed, one at the top of the dark-room, and the other at the bottom on the opposite of the room, the ventilation will be all that the most careful can desire. At the low price of 4s. 6d. this ought to find plenty of friends.

STOCKS' IMPROVED OPTICAL LANTERN.

Mr. W. Stocks, of Rye, Sussex, has sent us one of his new lanterns, and we have given it a trial against one of our old pattern lanterns, and we think that an advance has certainly been made in the production of a brighter and whiter light. We passed over one hundred slides through it, and were perfectly satisfied as to its efficiency. It is constructed on principles ensuring as perfect combustion as possible.

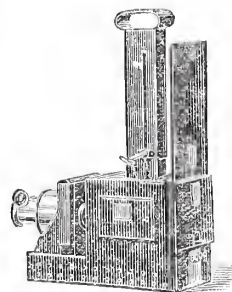


FIG. 1.

The lantern complete is shown in fig. 1. From this it will be seen that the chimney, although longer than usual, can be increased in length by means of the rackwork at the side. The operator is shielded from the heat by the tall upright tin plate at the back. The lamp is shown in fig. 2, and by a special arrangement the whole of the flames of the four wicks is utilised by the condensers. It is provided with a silvered reflector, which is adjustable in all directions, and is protected from tarnishing. The lantern can be used for enlarging as well as ordinary projection purposes, and deserves the attention of all would-be lanternists.

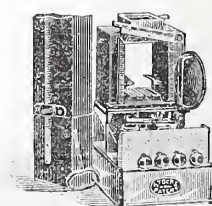



FIG. 2.

THE PHOTOGRAPHERS INDISPENSABLE MONTHLY



No. 4. FEBRUARY, 1892.

PUBLISHED BY ADAMS & CO.

FREE.

81, ALDERSGATE ST., E.C. (FACING THE STATION) AND 26, CHARING CROSS RD., W.C. (ADJOINING THE CAMERA CLUB.) Factories: 3 & 4, Aldersgate Buildings, E.C.

Quips and Cracks. By Yorick.

Haste thee, nymph, and bring with thee
Jest and youthful jollity;
Quips and Cranks and wanton wiles,
Nods and becks and wreath'd smiles.—Milton.

Alas, poor YORICK! . . . A fellow of infinite jest, of most excellent fancy.
Shakespeare.

No. 4 now ready, consisting of 16 pages, post free, penny stamp. A few copies only left of Nos. 1, 2, and 3, at 3d. each.

The current number is a most interesting one, and contains particulars of many novelties, including the

TORSIOSCOPE.

~~~~~  
**PAPA-MIDOLPHENOL, 5s. per oz., post free.**

This is our first number this year, and it is customary to profess to turn over a new leaf. Although why we should begin at the commencement of a new year, any more than at the commencement of every new month, every new week, and every new day, I do not know. After all, years are very much like men. A few are distinguished, but the majority are mediocrities. And 1891, from a photographic point of view, most certainly comes under the latter category. Some of our annuals and trade journals gave us a review of the past year, but after weighing and surveying it, very little that was new was added to its record.

\* \* \* \*

There's nothing like seeking for new developers entirely outside the range of every-day photographic chemicals. I have a friend who is always experimenting, and he extends this habit to every phase of his daily life. He even got married last week upon this same principle. But I must only inform you how he sets to work in matters photographic. His idea is to go in for those things that other people would least dream of, and he really believes that if

he continues to pursue this course, he will one day make some startling discovery. I tell him the startling discovery will be, that he will wake up some morning and find himself in a lunatic asylum.

\* \* \* \*

His pet developing theory is that, as all developers are mixtures, so all mixtures may probably be developers. For instance, only a short time back his eyes rested upon the two following advertisements: "Titan soap *will* wash clothes," and "Brookes's soap *won't* wash clothes." The happy thought immediately struck him—why not try a soap developer? So out he went, and bought a cake of each, and then came home and set to in earnest. He scraped away at each of the tablets, and made a 75 per cent. solution with boiling water, and used it hot. He argued that if heat produced colour, the hotter the developer the greater the variety of colour obtainable. Of course, the first thing to happen was the film leaving the plate. But he thinks that if he first fixes this on with marine glue he may yet stand a chance. At any rate, he means to try.

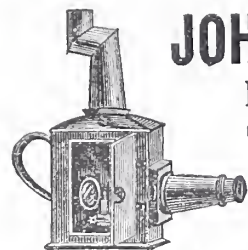
\* \* \* \*

The last time I saw him I ventured upon a little formula myself. I gave the following as a quarter-plate dose: Take four ounces of Hunyadi Janos and 247 grains of Turkey rhubarb; shake well, and place the measure near the plate five minutes before using. This is to give the picture a few minutes' grace to come out of its own accord. If it does not avail itself of the opportunity, I am sorry for the plate, that's all. Well, you should just have seen the result. I never saw a plate get so excited in the whole course of my existence. If you doubt it, do as Mr. Borwick recommends, TRY IT, not necessarily for publication, but as a guarantee of good faith.

\* \* \* \*

His very latest is a "dry gas" developer. Various gases will be brought into contact with the plate at one and the same time by means of a blow-through jet, and I don't mind saying that something lively is



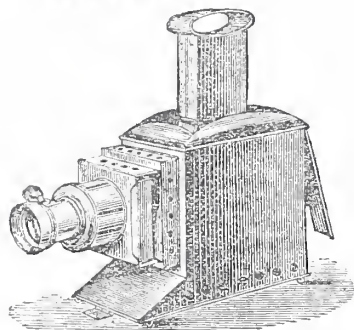


# JOHN PIGGOTT. New Department: Magic Lanterns & Slides.

**MAGIC LANTERN,**  
Complete with 12  
Slides (comic),  
48 Pictures,

**2/11.**

Postage & Packing, 9d.



## MAGIC LANTERN

With 3-wick Refulgent Lamp, 4 in. Condenser, and Achromatic Front Objective with Rack and Pinion Adjustment (which is also useful for taking 1/4 plate portraits). Complete in box, **26/6**

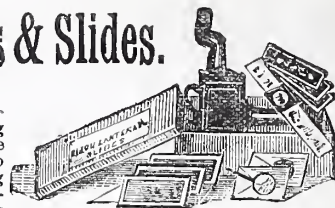
Ditto with Mahogany Body and 4-wick Lamp, **48/-**. Sets of Lithographic Slides suitable for the above (3 1/4), per set of 12, **4/6**

Please send Post Card for full List of Cameras and Solutions free. All goods of 10s. in value carriage paid to any part of the United Kingdom, except Plates or Mounts only.

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## The No. 1 BIJOU SET.

Comprises a Magic Lantern with Condenser and Front Lens, Paraffin Lamp, Silvered Reflector, Sixty Comic Figures on Twelve Long Slides, Three Complete Nursery Tales, each tale having twelve pictures on four slides, making thirty-six more pictures, Two Comic Slipping Slides, Two Moving Lever Slides, Two Moving Panorama Slides, Good Night, Welcome, Curtain, Queen, Rack-work Slide, Two Chinese Firework Slides, making 109 pictures in all, giving a picture 3 feet in diameter. Price **7/9**. Postage and Packing, **1/-**. No. 2 Set, same as above, but having a larger Lantern, and giving a picture 4 feet in diameter, **12/6**



## SLIDING CARRIER BLOCK

For same Lantern, for instantaneously changing slides when using a single lantern.

Each **1/4**, Postage **3d**.



## LECTURERS' READING LAMP.

With Flash Shutter, **4/-**

Postage and Packing, **9d**.

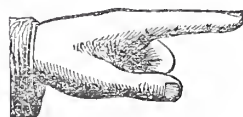


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The Smaller Sizes, mounted in Gold or Silver Jewellery, make Valuable Presents; the Larger Sizes, in Fancy Frames, make handsome Drawing-room Art Ornaments.

Full Particulars and Instructions sent on receipt of addressed envelope.

A Selection of Enamels and Special Chemicals sent on receipt of P.O. for 11s. 6d. A better Selection for 21s.

**A. GUYE, Junr., 77, Farringdon Rd., London, E.C.**

## Monthly Competition.

**o. 22, INLAND SCENERY, WITH OR WITHOUT FIGURES.**

In addition to the list published last week, prints have been received from—

|                               |                |
|-------------------------------|----------------|
| W. Sewell .. .. .             | Barrow         |
| E. Griffiths .. .. .          | St. Columb     |
| H. J. B. Davis .. .. .        | Bristol        |
| T. Marshall .. .. .           | Pudsey         |
| Miss J. Niblett .. .. .       | Ledbury        |
| R. Coulson .. .. .            | Pudsey         |
| J. C. Warling .. .. .         | Toward Point   |
| T. H. Sanderson .. .. .       | Cambridge      |
| W. H. Hiniugs .. .. .         | Pudsey         |
| J. White .. .. .              | Dublin         |
| W. S. Crowther .. .. .        | Pudsey         |
| A. Nicholson .. .. .          | Leeds          |
| H. S. Forman .. .. .          | Louth          |
| E. H. Forman .. .. .          | Louth          |
| V. T. Crow .. .. .            | Louth          |
| J. L. Mason .. .. .           | Holme          |
| Miss E. M. G. Shand .. .. .   | Chester        |
| W. R. W. Shand .. .. .        | Chester        |
| Miss C. R. Langton .. .. .    | Liverpool      |
| A. Valoa .. .. .              | Ramsgate       |
| T. D. Pritchard .. .. .       | Blackheath     |
| E. Winn .. .. .               | Birmingham     |
| J. Gibson .. .. .             | Hexham         |
| Miss L. Candy .. .. .         | Alton          |
| H. Rendall .. .. .            | South Molton   |
| Miss E. F. Borradaile .. .. . | West Hampstead |
| W. B. Pearce .. .. .          | Wednesbury     |
| J. Burrow .. .. .             | Pudsey         |
| J. G. Potter .. .. .          | Worthing       |
| J. W. Crozier .. .. .         | Hexham         |
| E. Perigo .. .. .             | Oldham         |

|                               |                  |
|-------------------------------|------------------|
| J. Richardson .. .. .         | Canning Town     |
| F. R. Ball .. .. .            | Clapham          |
| W. R. Driver .. .. .          | Liverpool        |
| J. Mills .. .. .              | Canarvon         |
| Miss E. C. Woodruff .. .. .   | Folkestone       |
| Rev. J. Drew .. .. .          | Chipping Sodbury |
| Miss F. E. McNair .. .. .     | Skelmorlie       |
| Mrs. J. T. Richardson .. .. . | Nottingham       |
| F. Morten .. .. .             | Surbiton         |
| F. Emsley .. .. .             | Leeds            |
| T. Hicks .. .. .              | Aldershot        |
| H. Hephworth .. .. .          | Manchester       |
| T. W. Horton .. .. .          | Lincoln          |
| S. A. East .. .. .            | Louth            |
| J. R. Matthews .. .. .        | Carlisle         |
| J. A. Watson .. .. .          | Carsick Hill     |
| H. Hannah .. .. .             | Liverpool        |
| J. H. Jackson .. .. .         | Stockton-on-Tees |
| J. Robertshaw .. .. .         | Hebden Bridge    |
| J. Sedgwick .. .. .           | London           |
| J. W. Sutherland .. .. .      | Newcastle        |
| E. R. Ball .. .. .            | London           |
| W. Moore .. .. .              | Lincoln          |
| J. W. Perryman .. .. .        | Fulham           |
| A. K. Greaves .. .. .         | Harlingham       |
| S. Kendon .. .. .             | Goudhurst        |
| W. S. Ellsworth .. .. .       | Hingston         |
| T. A. Cunningham .. .. .      | Greenock         |
| Geo. E. Bryant .. .. .        | Manchester       |
| C. H. Woodhouse .. .. .       | Hereford         |
| A. White .. .. .              | Stockport        |
| Miss M. S. Le Cornu .. .. .   | Jersey           |
| A. Hower .. .. .              | Stockport        |
| G. de B. Ball .. .. .         | Ballynagore      |
| J. T. Morshead .. .. .        | Camborne         |
| R. C. Joy .. .. .             | Ormskirk         |
| A. Hughson .. .. .            | Chester          |
| Mrs. S. E. Gaddum .. .. .     | Altrincham       |

|                           |             |
|---------------------------|-------------|
| C. Smallbridge .. .. .    | Ivybridge   |
| E. W. Horsburgh .. .. .   | Edinburgh   |
| Miss B. Cooper .. .. .    | Silchester  |
| A. Hutchinsou .. .. .     | Louth       |
| G. W. Taylor .. .. .      | Chelsea     |
| G. Woods .. .. .          | Hastings    |
| H. W. Ribby .. .. .       | Blackburn   |
| G. W. Ramsay .. .. .      | Richmond    |
| Symons G. Golton .. .. .  | Plympton    |
| W. H. Cooper .. .. .      | Bacup       |
| H. S. Smith .. .. .       | Bradford    |
| W. Walker .. .. .         | Nottingham  |
| Wm. Rice .. .. .          | London      |
| A. T. Cutley .. .. .      | Leytonstone |
| Geo. A. Buttifant .. .. . | Islington   |
| H. J. Redfern .. .. .     | London      |
| W. B. Dart .. .. .        | Torrington  |
| C. D. Taylor .. .. .      | Manchester  |
| A. M. Apel .. .. .        | Hastings    |
| B. Junneaux .. .. .       | Brighton    |
| A. H. Webbing .. .. .     | Brighton    |
| G. R. Betjemann .. .. .   | London      |
| G. Baxter .. .. .         | Birmingham  |
| G. A. Savage .. .. .      | Folkestone  |
| A. H. Rudge .. .. .       | Tottenham   |
| A. H. Withers .. .. .     | Reading     |
| W. T. Cliffe .. .. .      | Castleford  |
| Wm. B. Hellon .. .. .     | Liverpool   |

Prints were received late from the following:—E. Mason, Askrigg; Miss E. Annesley, Pau; R. C. Macleod, Hayward's Heath; J. H. Eden, Heath; G. A. Story, Canterbury; W. Mason, Rotherham; J. Smith, jun., Liverpool; A. C. Beilby, Roundhay; J. R. Fitton, Oldham; D. Bilson, Holmfirth; A. Turner, Nunhead; Hon. Miss E. Dillon, Wychwood; A. C. Nichol, Charlton Kings; E. F. Brockhols, Garstang; B. A. Smith, Birmingham; E. Ellam, Yarm; J. H. E. Radford, Nottingham.



## Quarterly Examinations in Photography.

**Question 1.**—What are stops, and how do you find the ratio apertures of the same?

**ANSWER.**—Stops may consist of separate thin plates of blackened brass, fitting into a slot cut into the lens mount, each pierced with a different sized aperture, this form being known as Waterhouse stops; or of a circular plate revolving upon an axis within the lens in such a manner that any of its apertures may be used. Another form, known as the iris, consists of metal leaves overlapping one another to a greater or lesser degree, thus giving the power of regulating the aperture. Stops are used to improve the definition of a lens, by cutting off marginal rays. This reduces the amount of light passing through the lens, and thus prolongs the exposure, which depends upon the proportion which the aperture of the stop bears to the focal length of the lens. This, the ratio aperture, is found by dividing the equivalent focus of the lens by the diameter of the stop. The equivalent focus may be ascertained with sufficient accuracy by focussing upon a distant object, and measuring the distance between the back of the lens, if a single lens, and the focussing screen, or from the stop, if a doublet lens be used.—**TRIPODIST.**

**Question 2.**—What are the relative exposures with lenses of  $4\frac{1}{2}$ ,  $8\frac{1}{2}$ ,  $10\frac{1}{2}$ , and 15 in. focus, working with diaphragms of  $\frac{1}{2}$  in. aperture?

**ANSWER.**—Dividing the focus of each of these lenses by  $\frac{1}{2}$  in. we obtain their ratio apertures, viz.,  $f/9$ ,  $f/17$ ,  $f/21$ , and  $f/30$ . To find the relative exposure, the ratio apertures are squared thus:  $9^2 = 81$ ;  $17^2 = 289$ ;  $21^2 = 441$ ;  $30^2 = 900$ , the proportionate exposures being 81, 289, 441, and 900, or reducing to simpler figures, and taking the  $4\frac{1}{2}$  in. lens = 81 as unity, we obtain: 1.357, 5.44, 11.01, or, say, 1,  $3\frac{1}{2}$ , 5 $\frac{1}{2}$ , 11.—**TRIPODIST.**

**Question 3.**—What rapidity of plate would you choose for landscapes, seascapes, and portraiture? Give reasons.

**ANSWER.**—For landscape work what I require is density, detail, atmosphere, and general brilliancy. There is generally plenty of light, and so I should use a fairly slow plate, because in those the emulsion is finely granulated and thick, so that it gives a more brilliant picture than a rapid plate. Sensitometer number, say, 15 to 20.

For seascapes there is generally any amount of light, owing to the blue colour of the sea. What I require, therefore, is not so much a rapid plate as a plate to give brilliancy, depth, and detail. A slow plate, therefore, would be the most suitable. Sensitometer number, about 15.

But for portraiture the very thing I want to avoid is hardness and chalkiness. The light is none too good, as a rule; so I should use a very rapid plate—it could not be too rapid—and as such plates have generally very thin, coarsely granulated films, I should have a very much better chance of getting the desired softness than on slower ones.—**STUDENT.**

### QUESTIONS.

10.—Give brief instructions for silver printing.

11.—State the formula of the toning and fixing bath you generally use.

12.—What may be the causes of metallic or iridescent deposit on the negative?

*Latest Day for Answers, February 8th.*

13.—How would you spot out pinholes?

14.—State the principles involved in the production of a collotype print?

15.—How would you reduce a dense negative?

*Latest Day for Answers, February 15th.*

### RULES.

1. Answers must be received on the date stated each week in the **AMATEUR PHOTOGRAPHER**.

2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A *nom de plume* may be used, and must follow every answer, and be affixed to every specimen of practical work.

4. Answers are not limited in length, but preference will be given to concise answers without unnecessary amplification.

5. Those desirous of competing must apply to have their names entered. As these examinations are intended to encourage the study of the theory and practice of photography, authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

6. Past successful candidates will not be allowed to compete.

**NOTE.**—No information of any kind will be given to competitors, and nothing but the answers must be included for the examiners. All other communications must be addressed to the Editor.

Marks will be given for all answers, and, when possible, the best three answers will be published. The answer will not be published till the week following receipt of the same, and the examiners criticise each answer sent in, and when no satisfactory answer is received, will supply one. Three prizes will be awarded at the end of each quarter. (Full syllabus on application.)

All communications to be addressed to:—"EXAMINATION DEPARTMENT," **AMATEUR PHOTOGRAPHER**, 1, CREED LANE, LONDON, E.C.

## ON PLATINUM TONING AS APPLIED TO GELATINO-CHLORIDE PRINTING-OUT PAPER.\*

By JAMES BROWN.

**FASHION**, which regulates the cut of our garments, has, as might be expected, some considerable influence in matters photographic. During the past two years there has been a steady movement in the direction of warmth and tone. In the higher regions of photographic art there was a time when "Big and Black" held supreme sway, and anything approaching tones which most of us now admire was a thing held accursed. Now men's minds are everywhere asking, How shall we arrive at the warmest tones? and skilful concoctors of formulæ are holding high revel in their search for the mystic process which shall forthwith make all things sepia. The numerous methods of toning (or staining) bromide papers recently published afford evidence of how strong is the revolt against blacks. We have, indeed, need to be careful lest, by over-doing it, we induce a revulsion of feeling. Above all, let us not outrage the eternal fitness of things by such proceedings as printing winter landscapes a bright red, and so forth.

Amongst all the methods of getting rich warm tones, I know of none equal to that which it is my privilege to bring before you to-night—viz., the use of a gelatino-citro-chloride of silver paper and chloro-platinite of potassium as the toning agent, as by its means we can get tones of the most exceeding richness and warmth with ease and certainty.

After lying stagnant for many years, the gelatino-chloride process has at last become very popular. In its original form it was a collodio-chloride emulsion, invented by Mr. G. Wharton Simpson in 1865. It never made much headway—why, it is difficult to say. To my mind, a collodion image is in many points superior to a gelatine one. Amongst its principal exponents was a north country photographer—Mr. George Bruce, of Duns. In 1882 Captain Abney proposed a gelatine emulsion, and his formula became the foundation on which every one has subsequently built until the analogous collodion paper was almost forgotten. On the Continent, however, there has for the last year or so been in use a collodio-chloride paper, and recently a similar product, under the name of Collodion paper, has been introduced into the London market by Messrs. H. Kuntzen and Co., samples of which I show you to-night. The late Herr Obernetter was first in the field, in 1885, with his now celebrated emulsion paper, followed by Liesegang, and after the lapse of five or six years we now have the choice of at least two brands "made in England."

My intention to-night is not to read a scientific paper, or to indulge in any theoretical or chemical speculations, but rather to go upon solid ground, over which I have myself trodden, steering clear of everything which has not been thoroughly substantiated in my own experience, and will treat (1) of printing, (2) of the toning bath, (3) of the process of toning, and (4) of finishing.

It may be mentioned here that my experience almost solely relates to Obernetter paper, but I have handled nearly every brand in the market, and shall have something to say of each.

Printing is conducted in the ordinary way, any negative that is not either hopelessly thin or dense being suitable. Contrary to the text-books and advice so plentifully given, it is not necessary to over-print any more than on albumen paper—in fact, to do so is in most cases distinctly harmful.

After toning with platinum, no paper I have yet tried reduces to any great extent in a properly made fixing bath, and if we desire a matt surface, and so squeegee on ground glass, that operation considerably adds to the depth of the image; so, if we over-print, "leatheriness in the shadows" will result. It is necessary to remember, however, that the depth of printing must have some definite relation to the tone we desire to obtain. This will be discussed when we come to the toning stage.

The toning bath which I have found to be the best is a simple one:—

|                            |    |    |    |       |
|----------------------------|----|----|----|-------|
| Potassium chloro-platinite | .. | .. | .. | 1 gr. |
| Citric acid                | .. | .. | .. | 10 "  |
| Distilled water            | .. | .. | .. | 4 oz. |

A platinum bath will only work when acid, and the use of citric acid, instead of nitric, as usually recommended, is a great improvement, due to Professor Burton, who found that the latter acid has a staining influence upon gelatine.

\* A communication to the Newcastle-on-Tyne and Northern Counties Photographic Association.



Other baths have been recommended, which are not so good as the above, and possess the serious disadvantage that they will not keep, whereas this one will keep indefinitely, provided the prints be properly washed before toning, so as not to contaminate the bath by silver salts. I have here a bottle containing a bath made up over two years ago, which has been in constant use ever since, strengthened when necessary by adding more platinum, which I keep in a dropping-bottle mixed in the proportion of one part platinum to twenty parts water. When of proper strength, the bath is of a dark straw colour, and as the toning agent is used up the solution becomes paler, so that by a little observation it is easily seen when the bath wants strengthening.

(To be continued.)

## Societies' Meetings.

**Aberdeenshire.**—The usual meeting was held on the 26th ult. Mr. J. Milne was elected a member. Mr. James Clark opened a discussion on "Printing Processes," strongly advocating bromide paper. A very animated debate followed, prints being handed round of different processes.

**Bath.**—On the 27th ult. Mr. W. Pumphery, President, in the chair, Messrs. E. J. Appleby and H. A. Wilkins were appointed auditors of the Treasurer's accounts. Mr. E. J. Appleby then spoke on the subject of a new developer sold under the name of Rodinal, which he believed was a derivative of coal tar, a strongly alkaline solution of paramidophenol. He had made a number of comparative tests varying the percentage of dilution, as against pyrogallol methods. These were handed round for inspection, and showed Rodinal to give less plucky negatives than pyrogallol. Mr. Appleby also drew attention to a number of transparent positives developed with the new agent; here excellence of quality was manifest. The members were invited to test Rodinal and report their experience at the next meeting, samples being handed them for that purpose by Mr. Appleby. The Hon. Secretary (Mr. Middleton Ashman) said his first trial of Rodinal showed over-exposure, and subsequent tests pointed to the necessity of a restraining agent being present; then plucky negatives could be obtained. Its behaviour in the case of transparent positives left little to be desired; indeed, in the near future gelatine plates and Rodinal developer would be the best method of making lantern slides. The Chairman spoke of some wonderful cloud effects he had recently seen in photographs, produced by a new form of shutter, details of which were promised for the following meeting. Mr. John Dugdale exhibited a choice selection of lantern slides he had produced by the wet collodion process, from negatives comprising views of the Fleet and racing yachts, of Gibraltar, Malta, Siam, Switzerland, etc., etc. These were shown by means of a Keovil prismatic lantern and self-registering carrier, operated by Mr. Davis.

**Bristol.**—On the 27th ult. the first meeting of the present term of the Bristol University College Camera Club was held, Mr. A. E. Mackett, Vice-President, in the chair. A paper on "Silver Printing, Toning, and Fixing" was given by Mr. E. W. Walker, Secretary. The kind of negative best suited to the production of a good print was first described, followed by useful information upon the exposure of the print to the light to ensure a good tone, and all the important details to be observed to produce permanency in silver prints. The cause of blisters was dealt with, and the different brands of albumenised paper in use. For toning the following bath was recommended by the lecturer: Acetate of soda, 3 oz.; distilled water, 80 oz.; gold chloride, 15 gr. At the close of the paper a discussion took place upon some of the details in producing good prints. Negatives were shown by Professor Sydney Young, D.Sc., also prints by Messrs. A. E. Mackett, E. W. Walker, and J. P. Phibbs.

**Camera Club.**—On the 28th ult. about 100 members and friend came together to see the slides announced to be exhibited by Lieut.-Col. Gale, Mr. Henry Stevens, and other members. Sir George Prescott occupied the chair. Previous to the lecture, the chairman called for objects of interest to be shown, and Mr. Haes handed up the manuscript, believed to be in Daguerre's handwriting, which had been discovered amongst Dr. Loewe's papers. The manuscript is a brief set of directions for daguerreotype photography, and is marked and signed in Dr. Loewe's handwriting, "Received from Mr. Daguerre in the year 1840." The document, mounted between glass, will be exhibited in the club-rooms for about a fortnight. The Hon. Sec. then exhibited a very fine photo-electrotype, lent by Mr. Henry Sutton, showing the perfection to which the process had been brought. Mr. Gale then commenced showing his pictures, dividing the series into sets, illustrating various classes of landscape and country life. The slides were produced both on gelatine and on wet collodion plates, and all met with enthusiastic applause. Mr. Henry Stevens showed pictures of flowers, home groups, and some

new studies of packs of hounds in the field, which were very fine. Other pictures were exhibited by Messrs. Cunningham, Noel-Cox, Elder, Sworder, H. C. Davis, Haes, Spencer and Mille, and the evening concluded with some slides by Mr. Bingley, lent by Mr. W. England.

**Cardiff.**—On the 27th ult. Mr. Howson, of the Britannia Works Co., gave a demonstration on the Ilford productions. Especial interest was evinced in the new "printing-out paper." Mr. Enoch Gronow and Mr. Wm. Jno. Crews were elected ordinary members.

**Cornish Camera Club.**—At a meeting on the 26th ult. Mr. H. Tonkin, Hon. Sec., gave a demonstration of enlarging, and by the aid of a limelight lantern turned out two capital 12 by 10 enlargements from quarter-plate negatives.

**Coventry and Midland.**—On January 27th the first of a series of six lectures to beginners in photography was given by Mr. H. Sturme, Vice-President of the society. There was a good attendance of ladies and gentlemen, who listened with great interest to Mr. Sturme, who treated very ably on the camera and apparatus.

**Douglas.**—A meeting of the lantern branch of this society was held on the 25th ult., when the American slides were shown, followed by slides on local subjects by Mr. Keig. Mr. Thomson and the Hon. Sec. attended to the lantern, and a most enjoyable evening was spent.

**East London.**—General meeting held on the 26th ult., Mr. C. Tylee in the chair. After the usual business, Mr. G. S. Pasco read a paper on "Fancy Work," including opals, ivories, transparencies, and silk, each item being illustrated with several specimens, the work of the lecturer, which were greatly admired. The paper was followed by a very interesting discussion, in which several of the members took part.

**Hackney.**—The ordinary meeting was held on the 28th ult. The Autocopyist Company, London Wall, gave a demonstration of the Photo-Autocopyist. The principle on which the process was worked was of the lithographic kind, but much simplified. After getting one print about the depth of platinotype, a number could easily be obtained without daylight, a great consideration this weather. After this demonstration, Mr. Clark, of the Incandescent Light Company, Westminster, demonstrated the working of their light for lantern work. A very brilliant light was obtained, and a number of the members' slides were put through the lantern by the Hon. Secretary. The safety of the light was amply demonstrated by the bursting of a bag, the most serious thing which it was stated could happen. A slight explosion was, however, all that took place.

**Hexham.**—A meeting was held to make arrangements for the formation of a photographic society for Hexham and district, Mr. J. Gibson in the chair. A large number of local photographers were present, and Mr. T. H. McAllan, Mr. S. A. Bowman, and Mr. T. P. Edwards were elected members of the Council. It was resolved that the society should meet on the first Tuesday in the month, and that the subscription should be five shillings per annum. Mr. John Crozier was appointed Hon. Treasurer, and Mr. John Gibson, jun., who was appointed Hon. Sec., called the members' attention to the "AMATEUR PHOTOGRAPHER Monthly Competitions," and all the members present were much interested in the scheme.

**Holborn.**—The Holborn Camera Club held their first smoking concert of the year at Anderton's Hotel, Fleet Street, on the 29th ult. An excellent programme had been provided by the Secretary, and a most enjoyable evening was spent by those present. During the evening Mrs. Brocas presented a chairman's hammer to the chairman, Mr. D. R. Lowe. It was a decided novelty, having the representation of a camera perched on the handle.

**South Hornsey.**—At a meeting, Mr. P. A. Legge in the chair, it was unanimously agreed that a regular council should be elected, whereupon the Provisional Council resigned, and the following gentlemen were elected in their stead, viz.:—Messrs. Hudson, Lang, May, and Roberts. It was decided that an exhibition should be held, the date to be arranged at the next Council meeting, the programme to include a concert and exhibition of lantern slides by limelight. After the business of the evening had been gone through, the Chairman exhibited several negatives which were much admired by the members.

**Huddersfield.**—An ordinary meeting was held on the 28th ult., Mr. T. K. Mellor, Vice-President, in the chair. One new member was elected. The AMATEUR PHOTOGRAPHER Prize Slides were shown on the screen to an appreciative audience, which, owing no doubt to the inclemency of the evening, was rather small. A cordial vote of thanks was given to the Editor of the AMATEUR PHOTOGRAPHER for the loan of the slides. The Secretary then gave notice that the next meeting would be devoted to the examination of stereoscopic photographs taken by members practising that branch of the art.

**Phot. Soc. of Ireland.**—An extremely interesting meeting was held on the 28th ult., Mr. Hedley in the chair. The subject was "Lantern Slides from Seventy-three consecutive Film Exposures" by Mr. Geo. Drury. The pictures, which were mostly views in the Isle of Man and had been reduced from half-plate, demonstrated the



usual delightful vagaries of films, such as granular markings that could not possibly be accounted for, black and white spots that had not been observed on the focussing screen, and the usual joining that had never been known to appear in any place but in the very best part of the picture. However, Mr. Drury put his pictures before the Society for the purpose of evoking criticism, and with the laudable intention of raising a discussion that might be instructive to all. After the slides had been viewed, Mr. Ruthven thought the thanks of all were due to Mr. Drury for showing his seventy-three consecutive exposures, good and bad alike. He said the usual practice was for members to bring down their best pictures, and while no doubt it was very gratifying to all to see good slides thrown upon the screen, still their percentage of failures were hidden away, and the Society gained nothing in the form of instruction from them. He considered the number of well-developed negatives and good pictures which Mr. Drury had obtained, whilst handicapped as he had been, was very creditable. Slides were also shown by Dr. Browne, Messrs. Smith and C. H. Matthews.

**Liverpool.**—The first ordinary meeting of the twenty-ninth session of the amateur photographic association was held on the 28th ult. The chair was taken by the retiring President, Mr. Paul Lange, who, after the election of four new members, presented the society's medals to the successful competitors at the annual competition held in November last. Mr. Lange then thanked the members for the loyal support they had given him during the two years he had presided over the society, and vacated the chair in favour of the new President, Mr. William Tomkinson, who had a very flattering reception. In the course of a short address, Mr. Tomkinson expressed the hope that the society would very soon be possessed of more commodious club-rooms, when it was his wish to give an "At Home" to the members and their friends. He also expressed his intention of endeavouring to extend the work of the association, particularly in the way of instruction for beginners, and of using every effort to make the society as successful under his presidency as it had been under that of Mr. Lange, to whom he proposed a very hearty vote of thanks, which was carried with acclamation. The Chairman then introduced Mr. T. S. Taylor (Taylor, Taylor, and Hobson), of Leicester, who gave a most interesting and instructive lecture on "The Design and Use of Photographic Lenses," illustrated by experiments and diagrams with the optical lantern. The lecture was followed throughout with close attention by all present, and the lecturer afterwards gave very full and lucid replies to questions asked by various members. In reply to Mr. Lange he stated that no advantage beyond that of variety was secured by the employment of Jena glass in the manufacture of photographic lenses, although it was of some advantage in telescopic work. On the motion of Mr. B. J. Sayce, seconded by Mr. Lange, a hearty vote of thanks was accorded to Mr. Taylor for his able and instructive lecture. The meeting then resolved itself into a special one for the purpose of qualifying the rule relating to the annual subscription, to the following effect:—"Members residing at a distance exceeding twenty miles from Liverpool, who have no occupation or address in that city, shall, as country members, pay only half a guinea annual subscription." This, on the motion of Mr. B. J. Sayce, seconded by Mr. T. S. Mayne, was carried unanimously, and the meeting closed.

**Oxford.**—Mr. F. Howard, of Wallingford and the Camera Club, gave a most lucid lecture on "English Pastoral Landscape, illustrated with Lantern Slides, Notes, and Comments." Much information was given as to selecting a picture, and it was shown that many a fine bit of pure landscape was passed by. A large number of the slides were from negatives taken by the old wet collodion process about twenty-five years ago, when photographers had to work hard and suffer much for their negatives; not as in these times, when laziness is encouraged in photographers and they get almost everything done for them. An enjoyable hour was spent. Twenty members and sixty visitors were present.

**Richmond.**—At the meeting on the 29th ult. Mr. Cembrano, the President, gave some practical instruction in the "Manipulation of the Optical Lantern." He spoke of the different illuminants, oil, gas, and electricity, describing the various lamps in general use, and the principles and details of the oxy-hydrogen light with the blow-through and mixed jets. The various parts of the lantern were clearly explained, and the differences in detail to be found in the principal makes commented upon. Finally, Mr. Cembrano with the club lantern illustrated practically the process of centering and regulating the light and all other details of manipulation.

**Rochdale and District.**—The exhibition of the above was brought to a close on the 30th ult. On the 26th ult. a grand conversazione was held; songs were rendered by Miss Janet Wilson and Mr. H. Bescoby, Miss Holden also giving two recitals in a capital manner. Two lantern exhibitions were given during the evening, "Rochdale and District," by R. M. Jones, and "A Tour in Wales," along with several studies of boys and their sports, by J. H. Crabtree, of Wardle. The slides brought forth great applause from the large audience present. On the 30th ult. some capital slides were shown by C. R.

Beaumont, and Mr. Harry Fletcher gave his "Trip to Scotland." The latter gentleman has had sole charge of the lantern during the whole of the exhibition, and reflects great credit on his splendid manipulation of the instrument, everything having passed off in an excellent manner.

**Selby.**—Thursday, January 28th, Mr. J. C. Thompson in the chair. The office-bearers for 1892 were elected as follows:—President, Rev. A. G. Tweedie, M.A., Vicar of Selby; Vice-Presidents, Messrs. William Rawling and J. C. Thompson. Committee: Messrs. J. H. Bantoft, T. R. Cooper, E. Swain, and W. A. Watson: Librarian, Mr. W. J. Allison. Hon. Treasurer and Secretary, W. N. Cheesman, the Crescent, Selby. The rules and dark-room bye-laws which had been drawn up at a previous meeting were formally adopted. It was resolved that an exhibition of members' work be held in the spring, and the following classes were selected for competitions:—(1) landscape; (2) architecture; (3) water pictures (marine and inland); (4) portraiture; (5) instantaneous; (6) miscellaneous (not included in above); also sets of lantern slides in each of the above classes, four pictures to form a set in each class. A competition for the beginners was left for future consideration. The AMATEUR PHOTOGRAPHER Monthly Competition Prize Pictures were examined by the members, and were greatly appreciated by them. A vote of thanks was passed to the Editor of the AMATEUR PHOTOGRAPHER for the treat afforded. Next meeting, Thursday, February 4th, subject: Lantern slides by the members.

**Sheffield Camera Club.**—The annual meeting of this society was held on the 27th ult. After the report, which was a satisfactory one and showed an increase in membership, was read, the following officers were elected for the ensuing year:—Mr. G. E. Maleham, President; Messrs. Morton and Rawson, Vice-Presidents; Mr. B. W. Winder, Treasurer; Mr. W. Gilley, jun., Secretary. The following gentlemen were elected on the council:—Professor Arnold, Dr. E. Skinner, Messrs. Newsholme, Strangways, Copley, and Ellinor.

**Sunderland.**—On the 27th ult. an entertainment was given by the Photographic Association in aid of the funds of the Royal National Lifeboat Institution, when a large audience was present. Some 250 very fine lantern slides were shown, including views of Chicago lent by the Boston U.S.A. Camera Club, general landscapes, instantaneous, and pictures illustrative of lifeboat and life-saving work. The President of the Association, Mr. W. Pinkney, took the chair, and at intervals songs were sung by Mr. Lindon Travers, and solos on the violin performed by Mr. A. Bevan, while Mrs. W. Pinkney presided at the piano. During the evening a hearty vote of thanks to the society was proposed by Colonel Reed, and seconded by Major Peacock, President and Secretary respectively of the local branch of the Lifeboat Institution, which will benefit to the extent of £20 or £30 by this effort on the part of the local photographers.

**Tunbridge.**—The fifth annual meeting of the above association was held on the 28th ult., the President, Mr. F. G. Smart, in the chair. Mr. J. J. Corke was duly elected a member. The Hon. Secretary, in presenting his report for the past year, said he thought it might be regarded as satisfactory, though the year, as a whole, was not so favourable for photography. The number of members had increased from thirty in 1890 to thirty-nine in 1891, of which number three had resigned, two of these in consequence of leaving the town, so that the members now number thirty-six. The attendances at the ordinary meetings have been higher. The exhibition of 1890 resulted in a loss through the unfavourable weather at the time, but the lantern entertainment on the 27th of January, and kind donations from Sir David Salomons, Bart., and Mr. F. G. Smart cleared off the deficiency. Excursions were arranged for Scotney Castle, Chiddingstone, Mayfield, East Grinstead; the latter by arrangement to meet the Brighton Society on the August Bank Holiday, but the weather being so unpropitious very few ventured there; and permission was also granted for members to visit the Bishopsdown Spa Grounds; here again it was very wet, only two members appearing. These excursions, though not so well attended as could have been wished, were very enjoyable to those who participated in them. Papers were read by Dr. Abbott on "Optics," and by Dr. Prince on "His Experiences of Photography forty years ago," which was fully reported in the *Photographic Reporter*. Two sets of prints which had been sent in for competition to the AMATEUR PHOTOGRAPHER, viz., "Enlargements" and "River Scenery," were on view, and the "White Mountain" set of slides from Boston, and some slides bought over by the President of the Crauford Camera Club, were also shown. A demonstration was given by Mr. Stocks, of Rye, the inventor and patentee of a new oil lamp and lantern, all of which proved of an interesting character. The fifth annual exhibition was held on the 25th, and three following days of November, and was certainly the very best that has been held, the weather being very favourable for it all the time, a large quantity of work coming direct from the Pall Mall Exhibition, which created a great deal of interest in it. As last year, Sir David Salomons, Bart., Mr. H. P. Robinson, and Mr. C. W. Hastings were the judges, and it was opened by Sir David Salomons, accompanied by Lady Salomons, the Mayor being







# QUERIES UNANSWERED.

Jan. 1—No. 5337.

8.—Nos. 5348, 5357, 5364.

22.—Nos. 5379, 5380, 5382, 5383, 5384, 5387, 5391, 5392, 5395, 5396, 5397.

29.—Nos. 5398, 5399, 5400, 5409, 5418.

# ANSWERS.

5354. **Optical Lantern.**—From personal experience I can recommend the Optimus lanterns of Messrs. Perken, Son, and Rayment, as advertised in this journal. Their 30s. lantern is marvellous value for the money, and will be sure to give satisfaction. —W. H. H.

5385. **Clip for Dark Slide.**—W. Watson and Sons have an excellent automatic spring catch for shutters of dark slides, which they fit to suitable slides at 1s. 6d. per spring. All my slides are fitted with them, and they act admirably and are no trouble whatever. —G. E. T.

5393. **Hand-Camera.**—Try Frank's (Manchester) Presto hand-camera. I bought one which I gave 10s. 6d. for, and I have found it a very good one; people would think it a toy at that price, but it is not so. But I should advise you to get one of Frank's Presto cameras, price £1 1s.; it is much more convenient, at it has six dark slides, and you can expose six plates as fast as you like without any trouble. I had my camera with me this summer when I was in the 3.10 Dutchman train from London to Bristol, and when we got near Reading and were running at the rate of a mile a minute, I took a photograph out of the window instantaneously and it came out grand. —P. H. HORNER.

5401. **Halation.**—Ground-glass plates were made by the Fry Manufacturing Company, Chandos Street, W.C. My experience has been that they are about equal to films. The grain is on the back of the plate, and rather improves printing qualities than otherwise; certainly would not show in an enlargement. Halation, I am certain, is sometimes a real phenomenon, caused probably by aberration, as I have got it on films and even on paper negatives as badly as on glass. —W. H. H.

5401. **Halation.**—Several makers supply plates coated on ground-glass. I have tried Fry's alone, and have found the ground-glass backs of little use in preventing halation. I have several interiors on these plates suffering terribly from this defect. Even films—I mean those on celluloid, such as England's (I have used none of the thin rollable films)—show traces of halation at times. Rubbing down is scarcely to be expected to remove the defect, as the scattered light causing halation acts most of all at that side of the sensitive film which is in contact with the glass or celluloid. Isochromatic celluloid films backed would, I should think, be the safest things to use. —T. PERKINS.

5402. **Crystalline Glasses.**—Surely you can get them from Fallowfield, 146, Charing Cross Road, W.? Or if not, you would infallibly get them (or anything else) from William Whiteley, Westbourne Grove, W. —R. A. R. BENNETT.

5403. **Paper Negatives.**—“Ki-non” had better apply to Messrs. Morgan and Kidd, Richmond, Surrey. —R. A. R. BENNETT.

5404. **Ceramics.**—McGhie and Co., 75, St. Vincent Street, Glasgow, supply all the materials required for ceramic photographs. —T. DOWLING.

5405. **Kallitype No. 2.**—I have used the above paper successfully, and obtained the three tones black, purple, and sepia. The yellow tone you complain of is—the removal from the bath too soon. When the print has turned to a black, give it ten or fifteen minutes grace; if that does not remove the yellow tint, the best thing to do is to make up a fresh bath and start afresh. Some foreign matter has perhaps got in by mistake. By-the-by, have you read Mr. Herbert Thompson's lecture on Kallitype No. 2, at Holborn, reported in the AMATEUR PHOTOGRAPHER for January 15th, 1892? —CYANIN.

5406. **Ilford Printing-out Paper.**—The ingredients of your bath are not stated, and it is, therefore, difficult to say whether the bath is too strong or not. The bath is too strong in gold if the prints tone black and the whites are discoloured. Use the following bath for both papers:

Borax .. .. . 120 gr.  
Gold (chlor.) .. .. . 1 ”  
Water .. .. . 10 oz.

This is sufficient to tone six or eight half-plate prints. —CYANIN.

5407. **Making Washer.**—“Light in Darkest Photography” or “How to Make a Print Washer” can be found by Stanley, on page 287 of AMATEUR PHOTOGRAPHER, October 16th, 1891, expressed in thoroughly practical terms. Back numbers can be obtained. —CYANIN.

5408. **Mount Cutting.**—There is no “tackle” required beyond a knife, straight-edge, compasses, lead pencil, and in the case of ovals (ellipses) a piece of thread and two pins. First mark out on the cardboard the exact size and shape of the opening, and then, grasping the knife like a melodramatic villain holding a dagger, draw it along the line, cutting right through at one stroke. This is not an easy matter, especially as the knife must be held at an angle of 60 deg. to secure the right level. The corners can be touched up a little afterwards with the knife, but any

attempt to improve the general outline will probably make matters worse. Keeping the knife in order is generally a trouble to beginners; it should be sharpened on an oilstone to a lancet shape, not too thin or it might break and do serious damage, and if too thick it will fail to go through the cardboard. Knives made for the purpose can be purchased at Buck's, Holborn Viaduct; Moseley's, High Holborn; or any tool shop, complete in handle, 2s. 6d.; new blades, 6d. each. “Culst” should practise on odd pieces of cardboard first, using a sheet of zinc to cut on, or, failing that, card or millboard. The edges of the mount are gilt by means of gilded gilt paper in strips about  $\frac{1}{2}$  in. wide and slightly damped. —EXPERT.

5410. **Printing Processes.**—Get some Aristotype paper, print a sheet moderately deep until shadows bronze, tone with the combined toning and fixing bath, not adding the gold until in use, and then only a drop from a dropping bottle (15 gr. to 15 dm. of water). If you put too much gold you will spoil it. We will take the formula given by the makers of the paper, only add half the gold given. First you will notice print go yellow, then yellow brown; let it tone a trifle further, then wash; after that the matt-surface will have pure whites and good tone. —BULCAREMAC.

5411. **Printing in Clouds.**—Exactly  $\frac{1}{2}$  in. under your query on the same page and same column, you will find a reply. The “best and cheapest” cloud negatives are those taken by one's self; if you must buy them, probably Wyley's or Perry's are as good as any. Both can be got from Fallowfield (146, Charing Cross Road, W.)—R. A. R. BENNETT.

5412. **Moonlight Effects.**—Point the camera towards the sun, but not including it, and give a shutter exposure with ordinary slow plates. —R. A. R. BENNETT.

5412. **Moonlight Effects.**—To obtain moonlight effects, choose a bright sunny day, preferably about sunset, when there are usually plenty of clouds about; point your camera directly at the sun, and when the latter disappears behind a cloud, make a not too rapid shutter exposure on a slow plate. Use a weak developer. Very pretty effects may be got if the picture embraces a sheet of rippling water on which some craft are lying. —T. DOWLING.

5412. **Moonlight Effects.**—Actual photography by moonlight is possible, but on account of the long exposure needed, and the continual movement of the shadows, the result is seldom successful. The subject must, of course, be focussed by day, and the plates backed, to prevent halation. By the rigid artist, the usual way of obtaining moonlight effects is deemed not altogether legitimate. Choose an afternoon in which the sky is abundantly filled with clouds, the outlines of which are clearly marked; and a view containing a suitable stretch of sea or water in the foreground; place the camera facing the sun, and carefully shade the lens. Patiently wait until the sun is temporarily hidden behind a cloud, which diffuses the light, and also prevents the sun's rays from striking into the camera. Then considerably under-expose, and exercise the greatest care in development. The moon may be indicated by affixing a small wafer in a suitable position on the back of the negative, but this requires considerable judgment, or the effect is merely ludicrous. —CYANIN.

5414. **Eikonogen Developer.**—Good developer for bromides:

|    |                         |           |
|----|-------------------------|-----------|
| A. | Eikonogen .. .. .       | 3 grm.    |
|    | Sodium sulphite .. .. . | 40 ”      |
|    | Distilled water .. .. . | 500 c.cm. |

|    |                             |         |
|----|-----------------------------|---------|
| B. | Potassium carbonate .. .. . | 75 grm. |
|    | Distilled water .. .. .     | 500 ”   |

Take 12 dm. of A and 10 dm. of B to 13 oz. water; when developed (before fixing), wash well, put in bath for ten minutes, 5 per cent. solution of alum, wash, then fix. —BULCAREMAC.

5414. **Eikonogen Developer.**—The following formula has given me every satisfaction for bromide work:

|    |                         |         |
|----|-------------------------|---------|
| A. | Sodium sulphite .. .. . | 554 gr. |
|    | Eikonogen .. .. .       | 136 ”   |
|    | Water .. .. .           | 20 oz.  |

|    |                       |         |
|----|-----------------------|---------|
| B. | Sodium hydate .. .. . | 190 gr. |
|    | Water .. .. .         | 10 oz.  |

|       |                      |         |
|-------|----------------------|---------|
| or C. | Washing soda .. .. . | 633 gr. |
|       | Water .. .. .        | 10 oz.  |

May be used instead of B. To develop, take 3 parts A to 1 of B or C. A solution should be kept in a blue or green glass bottle, in which case it will keep clear for a long time. —T. DOWLING.

# EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us before TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret. —ED. AM: PHOT.

¶ A. S. B.—We hope to return all the prints this week.

The prints may be entered in the Monthly Competition.

TE WIRIRIRU.—Has the material been sensitised for some time? The fact of the cap coming out white and the vignettéd edges being grey, points to light having had access to the edges. Possibly also the ground of your design is not sufficiently opaque to stop out the whole of the light. You might try painting the defective parts with weak Eau de Javelle.

J. A. G.—(1) A good print, though it would be improved by the roof being painted yellow on the glass side so as to stop it back and bring out more detail. (2) Good. (3) Yes, too much foreground, utterly without interest and taken wrong way of plate. (4) Camera not level, the two converging lines with the spire in between is not artistic. (5) Too flat, try printing slowly on gelatino-chloride paper. (6) Good. (7) Too panoramic. (8) Spoilt by cutting the hit of bridge off. (9) Should also have been taken more slanting, wants printing deeper an 1 less toning. (10) Too black in the right-hand corner, and sully wants clouds and reflections to tone down the white water. (11) Spoilt by the figure, and overtoned.

A. STREICHLITZ.—No more monthly slide competitions; entry forms sent on.

CLEMENT.—We think you will find No. 2 the most suitable for what you want.

JOHN E. DUMONT (U. S. A.)—The medal was duly sent off, and we hope you have received it ere now.

J. CUMBERBATCH.—You will find a complete list of lenses and their apertures in our issue of Dec 4th, p. 412. You must let us know what sort of lens you want, and the work it is intended for, we can then answer you.

W. A. W.—It is quite possible we may get a further note on this from abroad, but at present it is as much as we know. Try Mawson and Swan, 33, Soho Square, or Burgoyne, Burbridge, Cyriax, and Farries, Coleman Street, E.C.

B. SC.—We will hunt up some astronomical notes and books in the Patent Office and let you know titles, etc. We could send you some small collotypes and a French article on the subject if of any use.

H. PRESS.—The Willemsden Paper Co., 72, Watling Street, E.C. Any chemist will supply you with paraffin wax.

R. A. R. BENNETT.—Our publishers inform us that Piries keep the paper in stock. See this week's issue about lamp.

F. A. W. W.—The lens was not stopped down quite sufficiently, so that the side figures were not quite sharp. The trees would not be sharp and should not be. It is insufficiently printed and insufficiently toned.

CLEMENT.—Place the negatives in hot and strong washing soda and water, and they will then come off very easily with the help of an old nail brush.

SNOW SCENES.—(1) The detail in the trees is good, but you have got white paper on the ground, not snow; there is an entire absence of detail. (2) This is a little better, but not much. (3) Not so good as No. 2; the snow is far too detailless. Shall we return prints?

H. A. SALWEY.—We have not yet arranged for classes in the Annual Lantern Slide Competition, but No. 1 would come in animals or instantaneous, 2 instantaneous or figure studies, 3 architecture most certainly.

SEAGULL.—Letter by post.

ENGINEER.—Try a slow lantern plate or Mawson and Swan's or England's photo-mechanical plates, use as large an aperture as permissible with good definition, give rather a short exposure, and use a hydro-quinone developer well restrained, and only carry development as far as is possible without clogging or getting any deposit on the lines, then fix, wash well, and intensify with Monckhoven's silver cyanide intensifier. It might also be possible to obtain good effects by using a slow isochromatic plate and a yellow screen, so as to cut down the power of the blue lines. Probably the whole of your trouble lies in the use of an unsuitable plate for this work; the very slowest plates only should be used.

WALTER D. WELFORD.—Your letter received and contents noted.

H. L.—(1) Insufficiently developed; shows a circular patch caused probably by pouring a too strong developer on to one place. (2) Correctly exposed and developed; too much contrast, possibly, but this we cannot state, as you send no print; this could be avoided by printing in a bright light. (3) Yellow negatives generally give the best prints, but unless this negative was yellow it would be far too thin. (4) Correct, and should give a very good print on gelatino-chloride paper. (5) Under-exposed or else insufficiently developed, probably a little of both. (6) This required a little more bromide in the developer, and less accelerator, it would then have given you sufficient density in the faces; the fault in this lies solely in the developer. (7) Ditto. (8) A good “professional” silver printing negative. (9) Under-exposed. Your negatives are ready any morning, and we shall be pleased to see you if you like to call in and have a chat.

GEO. F. OLIVER.—We are unable to see our way clear to adopt your suggestion this year.

J. HALL.—Your negatives have been sent off some days ago.

J. A. G.—Thanks for information.

D. IN O.—Your prints have been sent off by registered book post this week.



**NOTICE.**—(1) The Actinograph. (2) If you now have a half-plate R.R. lens and you have to take your camera a long way back to take a near object, the longer the focus of your lens the further you will have to get away, so that with a 12 to 13 in. focus lens you will have to get further off still. To enable you to get close to a near object you must shorten the focus of your lens so that a lens of the portable symmetrical type would be better for your purpose, possessing about 5 in. focus. (3) It is quite possible to reduce from half-plate to lantern size, and then from a contact-made negative enlarge with 4 in. condensers; use any bromide lantern plate in the market and the developer recommended for it. Until you let us know to what size you wish to enlarge we cannot give you the distances nor the exposure.

**F. BAILEY.**—We do not require the negative of competition prints.

**CARBON.**—The process is not difficult, and "The A B C of Autotype Printing," price 2s. 6d., or else the Woodburytype Company's sixpenny manual would give you all information. A print made under the conditions you name would be eligible for enlargements only.

**A. GREEKIE.**—(1) Your directions to find the ratio aperture of etops are not sufficiently complete. (2) Always reduce your relative exposures to multiples of 1 if possible.

**TRIPODIST.**—Good. What rapid plate do you find comply with your requirements?

**BROMIDE.**—(1) You have omitted to state how to find the equivalent focus. (3) We certainly do not agree with your reasons for choosing a slow plate for portraiture, as softness and delicacy are the first requirements.

**BROM.**—(1) The method of finding focal length omitted.

**PEN.**—Good.

**BAS.**—(1) The method of finding focal length omitted.

**DANDY.**—(1) See note above.

**D. S. FALCONER.**—(1) See note above. (2) For seascapes, medium rapidity plates are quite rapid enough; see published answer. Always put number of questions at head.

**NORMAN.**—(1) See note above. (2) Always reduce to simple figures, using the largest aperture as unit. (3) The contrasts in a slow plate are greater as a rule than with rapid, and for seascapes, as the diffusion of light is more even, slow plates are usually used.

**JEUNE.**—(1) See note above.

**STUDENT.**—(1) See note above. (2) See note to Norman.

**BRUM.**—(1) See note above.

**AMATEUR.**—(1) Camera not upright and an inch too much foreground; (2) too flat, paper over-exposed; (3) ditto; (4) good, but half an inch less foreground would improve it; (5) good clouds would make this a perfect picture.

**A. H. B.**—Figures are admissible certainly, and if artistically arranged would probably assist in gaining a prize over a picture without the same.

**GREENWOOD P.M.**—Many thanks. We will certainly utilise as soon as we can.

**A. C. NICHOLS.**—The print was in green carbon tissue. It is possible to dye bromides and platino type by means of aniline dyes, but you must be careful to choose stable dyes and not use them too dark.

**ROB ROY.**—Light through the hinge of the dark slide is the cause of your trouble. The material forming the hinge is worn out.

**G. D.**—For magazines we should say 1 or 2; for films 8; for dark slides, 7.

**PHOTOS.**—We have a letter ready for you when you like to send on your address; obviously we cannot answer you *in coram publico*.

**CAMEO.**—Casell, Petter, and Galpin, La Belle Sauvage, Ludgate Hill, will supply the number you want.

**NOTICE.**—As a rule better results would be obtained without the shutter, which can easily be unscrewed and replaced by cap.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m.) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage for ward.

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Burnisher.**—Burnisher, cabinet, fitted with Bun-  
een's burner, 6s.; or will exchange for background, or anything useful.—A. Clark, 46, Gloucester Street, Myddelton Street, E.C.

**Cameras, etc.**—Quarter-plate camera, three double slides, tripod, and sundries, £2; or exchange hand-camera, or 12 by 10 enlarging camera.—A., 3, Queen's Buildings, Buckhurst Hill, Essex.

**Enlarging Apparatus, etc.**—To be sold cheap, enlarging lantern and balustrade, together or separate.—Howard Oldham, 21, Worsley Street, Glodwick, Oldham.

Lancaster's enlarging lantern, 5 in. condenser, almost new, 50s.; 8 in. burnisher and lamp, 10s.; 7 by 5 rectilinear lens, 18s. 6d.—M. Newhouse, 90, Victoria Terrace, Lancaster.

**Hand-Cameras, etc.**—No. 3 Junior Kodak, containing 48 unexposed films, in perfect condition; approval; price £6.—Apply, Barton, Morriston, Elgin. Griffiths' 1891 hand-camera, three dark slides, good as new, price 13s.—Mr. Lennerd, 29, Clarence Street, Preston, Lancashire.

Sun's secret Vest camera, condition as new, price 10s. 6d.—W. D., 2, Victoria Road, Kensington, London.

Hand-camera, rectilinear fixed-focus lens, finder, self-setting time and instantaneous shutter, cost 75s., lowest price 33s.; bargain.—H., 11, Exchange Street, Blackburn.

**Lanterns, etc.**—Newton's mahogany body lantern, 4½ condenser, brass front, rack and pinion, blow-through jet, price 45s.—Lewis, 35, Broad Street, Reading.

**Lantern Slides.**—Prince and Princess of Wales and late Duke of Clarence returning from Guildhall; lantern slides, 1s.—Howard, 16, Penryn Road, Acton.

**Lenses, etc.**—Swift's 9 by 7 rapid Paragon lens, with Iris diaphragm, or would exchange for Shew's Eclipse quarter-plate hand-camera, with Taylor and Hobson's detective lens.—H., Fuller House, Kettering.

**Negatives.**—Beautiful girls and women, high-class professional negatives from life; six sent free for 1s. 3d., carefully packed.—Richard, Wells, Norfolk.

**Sets.**—Complete outfit, good as new, the property of a clergyman; quarter-plate camera (Reynolds and Branson), Wray lens, Iris diaphragm, Thornton shutter, Watkin's exposure meter, focussing glass, printing frames, dishes, measures, etc.; patent dark-room lamp; price £7, cost double.—No. 239, office of this paper, 1, Creed Lane, E.C.

Half-plate camera, tripod, three Tyler's metal slides, leather case (lock), and Ross' Universal Symmetrical lens, Iris diaphragms, 10½ in. focus, excellent condition; approval; lot, or separate; full particulars.—Barton, Morriston, Elgin, Scotland.

For sale, a complete set of photographic apparatus, consisting of a half-plate Lancaster camera and tripod, with patent lens, with dilating diaphragm and instantaneous shutter, an "Amateur" dark-room lamp, seven printing frames, two dark slides, set of drachm scales, four negative boxes, six washing dishes, a Denson camera, and a quantity of mounts, bottles, chemicals, and photographic literature; price £7. May be seen at any time on application to H. G. P., 67, Downs Road, Clapton, N.E.

Underwood's quarter-plate set, including lens, with Iris diaphragms and shutter, reversing back, swing back, rising and falling front, turntable tripod and dark slide, brand new, price £1 10s.—Lennerd, 29, Clarence Street, Preston, Lancashire.

Wanted, cash offers for Underwood's half-plate lantern set; only used twice.—Address, 83, Crossby Street, Maryport.

Whole-plate outfit, consisting of Stanley's whole-plate camera and case, model 1890, three double slides, Thornton-Pickard shutter, 9 by 7 R.P. lens, Swift 8½ by 6½ W.1 lens, Eastman roll-holder, tripod,

also developing dishes, quantity lantern, half and whole plates.—A., Fuller House, Kettering.

Complete amateur outfit, half-plate camera, R.R. lens, instantaneous shutter, tripod, etc., nearly new, £8; cost nearly £20; list on application; letters only.—F. Platt, 112, High Street, Marylebone, London.

Lancaster's 1891 half-plate Instantograph camera, dark slide, tripod, and R.R. lens, good as new, only 67s. 6d.—53, S ad Road, Stroud.

Marion's half-plate camera, one double dark slide, R.R. lens, and tripod, good condition, price £5.—K. Lane, 47, Avenue Road, Leamington.

**Stereoscopic Apparatus.**—Stereoscopic hand-camera by Rouch, Eureka pattern, Iris diaphragms, regulating shutter, £10, cost £14.—Cornish, 45, Brompton Square, S.W.

**Sundries.**—AMATEUR PHOTOGRAPHER, first ten volumes, complete, bound, price £2.—Rector, Elm, Frome.

Lancaster's solid brass cycle clip, cost 7s. 6d., 3s. 6d.—A. E. Reingpach, Langham Hotel, W.

Dark elides, Instantograph, three, 6s. 6d. each; 7 by 5 rectilinear lens, 25s.; canvas bag, 3s. 9d. stand, 10s. 6d.; as new; all half-plates; approval.—Adams, 90, Hatton Garden, E.C.

Will give whole-plate rigid two-fold tripod and 35 numbers AMATEUR PHOTOGRAPHER (to date) for a good cabinet burnisher. Surplus stock for sale, cheap, list one stamp.—Arthur Jane, Bodmin.

Half-plate two-fold stand, very rigid, price 8s. 6d.—W. D., 2, Victoria Road, Kensington.

What offers in cash, or useful photographic sundries, for AMATEUR PHOTOGRAPHER, 1886, 1889, 1890, 1891? Four years complete, except three or four weeks in each missing.—W. T. Tucker, Herriek Road, Loughboro'.

706 good foreign stamps in Oppen's album, price 60s., or what offers.—Percival Horner, Keynsham.

AMATEUR PHOTOGRAPHER, vols. i. to xiv., few numbers missing from vol. i. What offers?—G. W. Smith, Bromley Common, Kent.

Referee safety bicycle, excellent condition, with all accessories, cost £10, sell for £9 10s.; or exchange good hand-camera, and little cash.—W. P., 36, Arundel Square, N.

Optimus tourist telescope, three draws, 2½ in. object glass; cost £3 four months since; price £1 10s.—Lennerd, 29, Clarence Street, Preston, Lancashire.

Changing box, Lancaster's, twelve quarter-plates, strong mahogany, brass-bound, 10s.; or exchange for first-class background; also Lancaster's 5 by 4 portrait lens, 15s.—W. P., 50, High Street, Hull.

Films for tracing lantern slides, 3½ size, 43d. per doz.—W. Finlay, Junior, 11, Bothwell Street, Glasgow.

AMATEUR PHOTOGRAPHER from February, 1888, to date, complete, clean, unbound, 10s.; or exchange.—Page, 34, Virginia Street, Bootle, Liverpool.

Solo violin for disposal, beautiful rich and powerful tone; suit professional or any player; cash wanted; baize-lined case and silver mounted bow; only 15s. 6d.; no rubbish, and very valuable bargain; about 20s. worth of first-class music given in free.—Mrs Graham, College Buildings, Ipswich.

For sale, Watkins' exposure meter, with instructions and extra supply of paper, or will exchange same for 4½ compound condensers; perfect.—Roberts, Photographer, Mold.

## WANTED.

**Cameras, etc.**—Camera, Lancaster's half-plate Instantograph, modern pattern, without tripod; state lowest price to A. E. Reingpach, Langham Hotel, W.

**Hand-Cameras, etc.**—Wanted, quarter-plate hand-camera without lens; state particulars.—Cooke, 54, Rivington Street, Curtain Road, E.C.

Wanted, Lancaster's Omnigraph hand-camera, or other make.—Frederick Sharpe, Church Street, Oakham.

Wanted, good hand-camera; price and full particulars to Samuel Ingham, 30, Freehold Street, Rochdale.

**Lenses, etc.**—10 by 8 rapid rectilinear, or hand-camera; exchange Oakley's patent Metamorphoser magic lantern, cost 112s.; also slides.—11, Waterloo Crescent, Dover.

**Sets.**—Wanted, half-plate camera, three double backs with quarter carriers, first-class lens, stand, and case; must be perfect, quite modern, with all movements; also 3 half and 6 quarter best printing frames; approval; deposit if wished; carriage paid one way if not taken.—Bull, School House, Pocklington.

Wanted, first-class quarter-plate outfit, rectilinear lens; state makers, price, etc.—Pyro, Shrublands, Sandrock Road, Tunbridge Wells.

Wanted, half-plate outfit, good condition, cheap; would exchange excellent quarter-plate outfit, or sell separate.—Apply, A. Watson, Micklegate, Selby.

Wanted, half-plate set, good maker, and good condition; state particulars to H. V. Cooper, Westbrooke, Grove Hill, Middlesbrough.



# The AMATEUR PHOTOGRAPHER

Telephone No. 1645  
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FRIDAY, FEBRUARY 12, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

**OUR VIEWS.**—Valenta on Platinum Toning—Labelling Bottles—Berthiot's New Lens—London and Provincial Association—The "Cosmopolitan"—Ashton-under-Lyne Phot. Soc. Exhibition—The Free Portrait Dodge.

**LEADER.**—Photography as a Branch of Technology.

**LETTERS.**—Fine Results on Lantern Slides (H. Salwey)—The Rapidity of the Single Lens (B. T. Nunn)—The Actinograph—(W. L. Noverre)—Alpha Paper (W. T. Adams).

**APPARATUS.**—Kallitype No. 2—Davenport's Portable Studio—The Todd-Forret Magnesium Lamp—Duro Cloth Bindings and Bausch and Lomb's Shutter.

**ARTICLES.**—Elementary Photography (J. A. Hodges).

**SOCIETIES' MEETINGS.**—Blackheath—Bolton—Brixton and Clapham—Camera Club—Coventry and Midland—Crewe—Croydon—Dundee and E. Scotland—Glasgow—Halifax—Herefordshire—Hexham—Lewes—Lewisham—Liverpool Y.M.C.A.—Midland Camera Club—North Kent—North London—North Middlesex—Phot. Soc. G.B.—Polytechnic—Putney—Richmond Camera Club—Rotherham—Sheffield—South London—Sydenham—Tadmorden—Wakefield—Wigan—Wolverhampton.

**NOTES.**—Warwickshire Photographic Survey.

**QUERIES AND ANSWERS.**

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All Communications should reach the Editor by Tuesday.)

### TERMS OF SUBSCRIPTION—

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**TRADE ADVERTISEMENTS** are received up to Tuesday morning.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.)

"Amateur Photographer" Monthly Competition No. 33.—"SEA PIECES OR RIVER SCENERY." Latest day, February 22nd. —Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, March 11th.)

In the current number of the *Photographische Correspondenz* Herr Valenta has a practical little note on the toning of plain or matt-surface prints with platinum, the tones thus obtained, and the duration of toning. We shall try and find room in our next issue for the verbatim translation of this paper, which throws a good deal of light on a subject now receiving great attention.

IN the section of his article, "Photographic Procedure," devoted to the dark-room, Mr. Wall has called attention to the necessity of having permanently affixed labels, or paper labels protected by varnish, but possibly those anxious for new experiments may desire to write indelibly on the bottles, etc. This can, of course, be done by covering the glass with wax, and cutting through the wax to the glass with a graver or some such tool, and then etching with the sand-blast or fluoric acid; but the following convenient solution may be used with a camel's hair brush without any inconvenience:—36 parts of fluoride of sodium and 7 parts of sulphate of potash should be dissolved in 500 parts of water, and also 14 parts of chloride of zinc added to 500 parts of water, and 65 parts of hydrochloric acid added. These two solutions should be mixed immediately before use, and half an hour after applying to the glass may be wiped off, and the letters will be found etched in with a matt-surface. To make them clear and distinct in the dark-room light, they may be painted over with ordinary white paint or enamel.

THE application of the Jena glass to the construction of new lenses is making rapid progress. The last new lens is one by M. Berthiot, of Paris. This is of the doublet type, composed of two meniscus combinations, with a focus of about 9 in., and has an effective aperture of  $f/11$ . At this aperture it covers absolutely sharply a plate  $4\frac{3}{4}$  by 6, and with the smallest diaphragm,  $f/60$ , it covers sharply a circle the diameter of which is equal to  $18\frac{1}{2}$  in.

THE London and Provincial Association request us to announce that they will hold their annual musical and lantern entertainment, to which ladies are admitted, on the 18th inst., in the St. George's Hall, Champion Hotel, Aldersgate Street. Mr. J. Traill Taylor will take the chair, and the programme arranged by the Committee is unusually attractive.

A CORRESPONDENT in Philadelphia has sent us the current number of the *Cosmopolitan*, a high-class illustrated



magazine, somewhat resembling in character the *Century* and *Scribner's*, so well known on this side of the water. It contains a very good article upon "The Leading Amateurs in Photography," with some very fine process-blocks of examples of the work of C. B. Moore, John E. Dumont, Mrs. W. Gray Bartlett, Mr. Breese, Mr. Nelson, Alfred Stieglitz, Mr. Bullock, Mr. Redfield, and Miss Catherine Weed Barnes; all of them familiar names, and many of them prize winners in our competitions.

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THE Ashton-under-Lyne Photographic Society will hold an exhibition of photographs in the Town Hall on Feb. 16th, 17th, and 18th. Amongst the exhibits will be the 1891 Prize Pictures of "Holidays with the Camera," and the 1891 Prize Stereoscopic Slides. Each evening, lectures, illustrated by a series of lantern slides, will be given. The subjects are "The Stone Age of the Passion Play at the Italian Lakes," by Mr. G. E. Thompson, President of the Birkenhead Society; "Iceland," by Paul Lange, President of the Liverpool Photographic Society; and "A Tour in New Zealand," by W. Bailey Wilson, of Manchester.

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PHOTOGRAPHY has undoubtedly conferred enormous benefit on the world generally, but it has also given many a rogue a chance of turning an honest (?) penny. The following clipping from one of our local newspapers speaks for itself:—

"Another dodge, which doubtless has been even more successful, is the Free Portrait dodge. I don't know whether it is of English or American origin, but in America it is a great institution. The mode of operation seems as fair as it is simple. Your correspondent, who is supposed to be easily gulled, receives from a distant so-called National Portrait Association a circular detailing a new method of advertising. 'Advertising in newspapers being very costly and unsatisfactory,' the association have resolved to make 300 two guinea portraits, life-size, free of charge, on condition that the portrait when completed shall be exhibited to friends, whose orders would of course recoup them for the free portrait. Could anything be fairer or more attractive, or more likely to obtain the confidence of one so innocent as myself? It is needless to say I send my photograph to be copied, and anxiously await the arrival of the two guinea life-size Fusain portrait. It doesn't come. Instead I receive a circular with wood-cut designs of German mouldings, with an intimation that as I should require the portrait to be framed, a frame may be selected from the designs sent, at prices named. The prices vary from 15s. to 25s. I write in return that I am an amateur frame maker, and intend to make my own frame. Do I receive the portrait? Not a bit of it. Instead I get another circular, offering to make a frame for 15s., rather superior to the first offered at that price. In the meantime I show the designs to one of the frame makers in the town, who undertakes to make the frames at 48s. per dozen. He does not speak at random, as one of the Free Portrait frames coming to the island had got smashed, and the Steam Packet Company had to make it good. Instead, therefore, of my ordering a frame at four or five times its worth, I write again, 'I want my Free Portrait.' Back comes another circular with a 'great final offer'—I can select any of the frames at 'one-third the regular price only'—but no Free Portrait! My son writes me from Cleveland, Ohio, that four and five pounds are obtained for these 'free' portraits in America. He has seen one, a perfect abortion, for which £5 was paid, and which he estimates not to be worth 7s. 6d. Clearly the Street Philosopher was not far out when he said, so far as some people are concerned—'Life is a series of dodges.'"

We do not suppose any of our readers are ever likely to venture on such a proceeding as to actually try this grandiloquent offer, but they may know some one who has or is about to do so. Several cases have been tried in the courts, and the free portrait dodge ought to be pretty well blown by this time.

## PHOTOGRAPHY AS A BRANCH OF TECHNOLOGY.

WE attended, as stated in our issue of last week, to hear Prof. Meldola's lecture at the P. S. G. B. rooms on the above subject. Notwithstanding the fine weather and the standing of the lecturer, there was only an audience of twenty-four to hear the paper read in the Professor's unavoidable absence. After briefly referring to the importance of photography, the paper summed up as follows "the enormous service photography has rendered to other branches of science":—

"The modern dry plate has insinuated itself into every branch of practical science; whenever a phenomenon of a temporary character has to be registered with absolute accuracy—where the human eye fails, owing to the faintness of the object or the rapidity with which the phenomenon occurs, there the aid of the dry plate is invoked. The application of photography to astronomy has, as is well known, relieved the eye of the astronomer and curtailed the work of the observatory to an extent bordering on the marvellous. A faint nebula, which by eye observation may take many years of wearying labour to represent in the form of a drawing, in the course of a few hours impresses its image in all its fineness of detail on the photographic plate—a memorial for future ages of the true form of the nebula at the time of its being photographed. Stars which appear as points of light in the telescope are shown by the photographic plate to be small nebulae, and stars and nebulae which have altogether eluded the most powerful telescopic search impress themselves on the sensitive film. All this and much more in the same direction is such familiar knowledge now that it is only necessary to mention the facts; nor need I remind you how the photographic plate is being utilised for the photo-astrophysical survey of the heavens, and in astronomical spectroscopy for the permanent registration of the solar spectrum and the spectra of the stars. The 'Draper Memorial' is one of the latest examples of the utility of photography in the observatory; it is no exaggeration to say that one of the grandest problems of modern science—the question of stellar evolution—will be rendered capable of scientific discussion by this application of the gelatinobromide film. The modern astronomical observatory is, in fact, equipped for photographic work quite as much as for observational work, and the photographer has become as necessary as the observer. In physics and in chemistry also the photographic plate has been added to the weapons of research. Here it has been used to record phenomena which occur with such rapidity as to elude visual perception. What would the Edinburgh reviewer of 1843 have thought of the possibility of photographing a soap film in the act of breaking, or a liquid drop in the act of falling? Yet, as you all know, Lord Rayleigh and Mr. Boys have succeeded in doing this. Or take again the application of the sensitive plate to the elucidation of the phenomena of gaseous explosions by Prof. Oettingen, who, by using a rapidly rotating dry plate, was enabled to show the intermittent character of the flash produced by the explosion of hydrogen and oxygen. Profs. Liveing and Dewar have also succeeded in photographing the spectrum of a mixture of exploding gases. In spectrum analysis, in fact, the services which have been rendered by photography cannot be over-estimated. The astronomer, the physicist, and the chemist must have for reference complete and accurate charts of the spectra of the chemical elements. The early maps of Bunsen and Kirchhoff, and the splendid 'Spectre Normale' of Angstrom were drawn by eye observation after years of laborious work, and with injury to the eyesight of the observers. These maps are now produced by photography without any tax upon the eyesight, and with an amount of detail that renders the early maps—executed with such painful labour—but mere skeletons as compared with their photographic representatives. The spectra can moreover be compared far more readily and with much greater accuracy by the photographic method. The method of eliminating the lines in the spectrum of one element, due to the presence of a trace of some other element as an impurity, which we owe to Professor Norman Lockyer, has only been rendered possible by photography. If the residual lines common to several elements, and which cannot be traced by this means to any known element, should lead to the discovery of new elements or to the resolution of known elements into simpler forms of matter, the credit must be given to the photographic method.

"But it will be safer to confine ourselves to what photography has actually done for science than to attempt to enter the regions of speculation. The case to be made out is such a good one that there is no need to draw upon the imagination. Thus, again, in the region of spectroscopy, the relationship between the constitutions of chemical compounds and their power of absorbing certain definite light waves, as investigated by Professor W. N. Hartley, may be said to have been discovered by means of photography, because the absorption is, in the case of colourless liquids, exerted beyond the limits of the visible spectrum. In meteorology the photographic plate has



also been of the greatest service, and a British Association Committee has been formed for the purpose of stimulating work in this direction. Most of those present are, no doubt, familiar with the more striking results achieved by meteorological photographers. The fleeting forms of clouds can be registered with absolute fidelity, and by an ingenious arrangement of electrically connected cameras the height and rate of motion of clouds has recently been determined by the aid of photography. The character of the electric discharge in the laboratory has been studied photographically by Mr. Shelford Bidwell and by Professors Oliver Lodge and C. V. Boys, and the large scale discharge of the lightning flash has been made to impress itself on the photographic plate. The results are known to all; the conventional zigzag 'fork' appears to have no existence in nature. The destructive effects of wind storms on buildings can also be studied in photographs, with an amount of accurate detail that it would be impossible to represent by any other method; and I am informed by Mr. G. J. Symons that important conclusions concerning the nature of the atmospheric movement have been arrived at by the examination of such photographs."

The geographical, ethnological, biological, and other applications of photography were then summarised, and the paper then went on to define the subject of the lecture, and said:

"From every point of view, therefore, photography claims to be placed on the same basis as other branches of technology. The Photographic Society, I am happy to see, fully recognises this in the recent action which it has taken, and which is expressed in the report of the Affiliation Committee. I consider this an excellent move in the right direction. But it is easy enough for the society to recognise the technical importance of its own subject; the difficulty is to move public opinion, and to convince the nation that we are behind other countries in this respect. The first step is to draw up and circulate widely an account of what is being done for photographic technical instruction on the Continent. I had intended, when first invited to lecture here, to offer some such statement, but I was glad to read in a recent number of your Journal that this task had been undertaken by Mr. Warnerke, and I hope that some means will be taken to bring his report under the notice of those interested in technical education. It is clear from what has already been attempted by this society, and from the opinions which have been expressed on all sides by those whose voices carry the weight of authority, that nothing short of a Photographic Institute will meet the requirements of the case. This I most earnestly hope will be the end and aim of every movement made by the society. In the Cantor Lectures, which I had the honour of delivering before the Society of Arts in the spring of last year, I alluded to the absence of such an establishment in this country as 'remarkable'; before this society I am tempted to express myself more strongly, and to stigmatised its absence as a national disgrace. Of course we all have more or less distinct ideas of what the functions of such an Institute would be. It is premature as yet to speak of the details of an institution which exists only in our aspirations. But whatever may be the final outcome of the movement which has been started, the whole duty of such an institution might be summarised in the statement that its work would consist in spreading a knowledge of all that is known concerning photography, and in investigating that which is unknown. In other words, its duties would be, as in the case of kindred institutions, teaching and investigating. Without wishing in any way to intrude my opinions into the deliberations of your Council, I thought that I might with advantage avail myself of the present opportunity of submitting my own views with respect to this question of technical education in photography. In giving expression to these views I have in mind the consideration that the remarks which I may apply to our special subject apply to many other related technical subjects, and that the course which may be adopted in the starting of such an institute as that which we all wish to see come into existence, may have a wide and important influence on existing notions concerning the whole question of technical education."

Professor Meldola then pointed out the dangers which might accrue, and spoke with no uncertain sound on this point:—

"The danger ahead which threatens the true cause of technical education appears to me to be this:—The resources of the country are being too much frittered away in the multiplication of machinery for imparting elementary instruction, and the higher specialisation, which alone will save us in the end, is being crippled thereby. The elementary groundwork must be laid, and this work, as far as it is being done, cannot be done too well. But it is absurd to suppose that we shall recover our lost position in any branch of industry by scattering broadcast a knowledge of elementary science, and there leaving matters to stand. A technologist is nothing—at least in any of the subjects with which I have had connection—unless he has the

means of superadding more advanced specialisation to his general grounding. So far as the chemical industries of this country are concerned, a few highly-trained specialists are worth more than an entire army of elementary certificated teachers or prize-winners. We are expending so much energy over our foundations that there is but little left for raising the superstructure. We are arming our industrial fighters with weapons which are as pop-guns compared with the heavy ordnance of our competitors. Unless those who are responsible can be made to see that the elementary training in general principles is, in a large number of subjects, quite useless unless the higher specialisation is equally well catered for, we shall be no better off in these branches of technology than we were before. The elementary training bears to technology the same relationship that the tuning of the instruments does to the overture. There is a great deal of twanging and blowing going on all over the country, but, as yet, comparatively few indications of a finished performance. There is enough money in the hands of the County Councils at the present time to support technical institutes adapted to local requirements on a scale which would bear comparison with the polytechnics and technical high schools of the Continent. If each county, or group of counties, had its central technical institute, manned by competent specialists, then the elementary training might bear real fruit, and we should look forward with greater hope to the result of the campaign on which we have entered. It is not difficult to see how the fight will end if we persist in blazing away with this elementary small shot in response to the ponderous missiles of our industrial competitors."

Necessarily, everyone wondered what was to be done, and what the author of this paper, whom we need not state is one of our foremost technologists, would suggest as the best thing to do. Here we have his plan:—

"The Photographic Institute, such as we desire, would be an establishment thoroughly equipped for the best practical instruction, well provided with appliances for carrying on research in every department of the subject, and having attached to it the most competent specialists in every branch. The staff need not be numerous at first; a chemist, an optician and physicist, an expert in photo-mechanical processes, and an artist would represent the chief departments. Your committee or governing body would know the right men to select; if they cannot be found in this country you may have to go abroad for them. This course may appear ignominious, but if it has to be adopted so much the better; it will bear practical witness to the necessity of having the means of raising such men in our own country. The ideal institute may be a slow growth, but every effort should be made to establish it. The Photographic Society has already taken the initiative by proposing an affiliation with kindred societies. This scheme should be energetically pushed forward, and every means adopted for urging the importance of the claims of photography to have a recognised technological centre. I venture to think that an impetus would be given to the movement if representatives of the Camera Club, the Photographic Convention of the United Kingdom, and of the numerous photographic societies of the metropolis were invited to another conference, such as was held last year, but with the special object of forming a joint committee, under whose authority a further appeal might be made for public and private support. If only a moderate fund could be raised at first, operations might be commenced. Surely the numerous firms which have come into existence through the general introduction of photographic processes and the large body of wealthy amateurs who practise the art as a pastime, might be sufficiently interested in the movement to give it their support."

"It only remains now to bring these suggestions to a practical issue. We are such a very practical nation that unless something tangible is offered, the foundation of the Institute may be indefinitely delayed; as yet there is nothing of the kind in existence—there is no organised work being done that appeals directly to the patriotism and to the pockets of those to whom you may legitimately look for assistance. But elementary photography is being taught in connection with technical schools and classes all over the country. A good beginning might be made if under the auspices of the joint committee a few first-class specialists were enlisted and authorised to give short courses of demonstrations to those affiliated societies or in those centres which desired to receive such instruction. The local centres might fairly be asked to make the necessary arrangements and to bear the small expense of local organisation; the fund raised by the joint committee would be well spent at first in defraying the costs of a few special lecturers. You may have some difficulty in laying your hands on the right men for this work; I need hardly remind you that the whole success of this initial movement would depend upon your sending only the most highly qualified specialists. You must have men who can teach the teachers and convince practical photographers that underlying the practice of their art are broad scientific principles which it is their interest to know something about. These preliminary peripatetic courses must be regarded in



the light of missionary efforts, having for their object not the multiplication of photographic operators, but the awakening of the elementary and advanced student to the higher aspects of their subject. It is desirable to have this function of the lecturers well understood at the outset; the experts who are entrusted with this work will know well enough that it is impossible to make a technologist out of a student, however enthusiastic he may be in his subject, simply by giving him a course of lectures.

"If the system of itinerant instruction which I have suggested can only be fairly started, even on a small scale, one important function of the Institute will have been inaugurated. It will have a claim upon the practical educationalist as a teaching body; it will appeal more specifically to the promoters of technical education, and to those public bodies which have voluntarily or by Act of Parliament identified themselves with this movement. It is certainly discouraging—I may say discreditable—when we see the magnificent scale on which the photo-technical Institutes of Berlin and Vienna have been founded and equipped, that in this country, whatever the importance of the subject, public recognition and support come only after success has been achieved by private enterprise. I am afraid you will have to reckon with this national characteristic, which, although retarding advancement in many directions, is so far good that it calls forth the most strenuous exertions to ensure success at the outset of every new movement. Upon the success of your first small undertaking will depend the larger ultimate success which we all look for.

"One other suggestion occurs to me which may help to strengthen your hands. I have said that instruction in photography is already being given in many technical schools; this instruction is more or less of an elementary character. It seems feasible to combine with the proposed courses of special lectures a system of inspectorship which might be carried out by the same staff. Your lecturers would be recognised experts, capable of advising such schools as to methods of teaching and of co-operating with local centres in the selection of the most highly qualified teachers. I am sure that most centres would be only too glad to avail themselves of the knowledge and experience thus placed at their service. If you begin operations on these lines at first—if you can carry on this combined system of skilled teaching and inspection successfully for a few years, your claim for permanent establishment and endowment as a Photographic Institute cannot but receive that support from public bodies to which your educational efforts will have entitled you, and which in other countries is given by the State."

In the discussion which followed, every speaker had another shy at the State. Several of the speakers had actually been abroad, and drew most rosy pictures of the Institutes of Berlin, Brussels, and Vienna, but obviously could only state that in England we had no such places. In the above-mentioned Institutes it was possible for any worker desirous of undertaking original research to do so with costly apparatus of the most complete kind provided by the State, and with a merely nominal outlay, really for the material used. In England we have absolutely no such facilities, and the would-be discoverer is hampered frequently by want of means, want of apparatus, and want of general support.

The questions which naturally occur to one after reading the above extracts of this important paper are these: Is the P.S.G.B. strong enough to found such an Institute as is wanted? Is the plan suggested the correct one to pursue? And what can the individual amateur do to further this object? Of these questions we shall hope to be able to treat in our next issue. It is a subject of sufficient importance, both individually and nationally, as to merit the consideration of all earnest workers, and we shall be pleased to hear any of our readers' opinions.

**Polytechnic Photographic Society.**—The attention of those who have attended the photographic classes at the above institution is called to the existence of this society. By the rules they can be admitted as ordinary members. Full particulars will be forwarded if application be made to the Secretary, 309, Regent Street, W. The next meeting will be on Friday, February 19th, when we hope to show the AMATEUR PHOTOGRAPHER 1891 Prize Slides.

**McGhie and Co., of 75, St. Vincent Street, Glasgow,** have sent us the 1892 edition of their catalogue of photographic apparatus, etc. Each year it grows bigger, more complete, and more useful, and has an enormous number of illustrations of the very latest novelties in apparatus and accessories.

## Letters to the Editor.

### FINE RESULTS ON LANTERN SLIDES.

SIR,—In the interest of those who may have failed to obtain satisfactory results, especially as regards *tone*, may I be permitted to recommend a process which in my hands has yielded the most perfect slide I have yet produced? The tone and general character are such that I doubt if it would be possible to improve upon it. To commence, let the plate chosen be one of Fry's excellent make. Expose in the camera, *not by contact*, even if copying same size. Develop with Edwards's "Special Transparency Developer." Fix with the citric and sulphite and hypo recently recommended by yourself, Sir, in the AMATEUR PHOTOGRAPHER, and pass through plain alum as usual. I have no interest whatever in the firms mentioned.—Yours faithfully, H. SALWEY.

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### THE RAPIDITY OF THE SINGLE LENS.

SIR,—In the excellent article upon "Elementary Photography" which appears in your last issue, I notice a somewhat misleading remark with reference to the rapidity of the single lens. In recommending the rapid doublet, the writer states that it is "many times more rapid in action than the single lens." Surely he cannot have observed that the very lens (Swift's W. A. landscape) of which an illustration appears in the text has a working aperture of  $f/8$ , which is the same as that of the ordinary rapid doublet, while even Swift's Rapid Paragon does not work more than twice as quickly, with an aperture of  $f/5.65$ . But for ordinary purposes the limit of the single lens may be considered to be  $f/11.3$  as against  $f/8$  for the doublet; that is, the doublet has the power of working at twice (not many times) the pace of the single. This power, however, is seldom needed, and for the beginner is positively harmful; for a small error in exposure, of no importance at  $f/16$ , might well be fatal at  $f/6$ . The only disadvantage of the single lens is distortion; and this is practically non-existent if a lens of moderately long focus—say nine inches for a half-plate—be used. Its great advantages are brilliance and cheapness.—Yours, etc. B. T. NUNNS.

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### THE ACTINOGRAPH.

SIR,—In your issue of the 29th ult. Messrs. Hurter and Driffield describe a new form of Actinograph. The subject is one of considerable interest to photographers, to whom the means of ascertaining correct exposures would be invaluable. Their discovery that the actinic value of the light can be ascertained by calculation for any day and hour of the year is most interesting, but the value of this discovery for practical purposes depends in the first place on the photographer's ability to decide whether the light at the time of exposure corresponds with the "very bright" "bright," "mean," "dull," and "very dull" of Messrs. Hurter and Driffield. These gentlemen state that "the selection of the right point to use presents no difficulty if the definition of a mean light be borne in mind. A mean light is indicated when there is just sufficient sun to cast a very faint shadow." Surely a mistake may easily be made here. What is a faint shadow, and how is the shadow to be observed, and suppose we are able unerringly to interpret this definition, how does it help us to determine what the inventors mean by the term dull, very dull, etc.? In the second place it may be remembered that the instrument is arranged to give the exposure for an ordinary landscape, which is defined as "a landscape in which there is no dark or massive object in the immediate foreground," but if the exposure is required for a difficult kind of subject, the photographer must rely on his own judgment, as the instrument apparently fails to assist him. The interest of the paper would have been much enhanced had the writers included a table giving the value of the light for every hour of the day throughout the year.—I am, Sir, yours, etc., W. L. NOVERRE.

Brighton, Feb. 8th.

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### ALPHA PAPER.

SIR,—Seeing Mr. Gottlieb's letter about Alpha paper in your issue of December 18th, I should like to state that I also have used the Alpha for enlarging, and would willingly use the more rapid brand if I could get it. As it is, it takes me an hour to enlarge a portrait to life size.—I am, yours, etc., S. Africa. W. TRELAWEY ADAMS.



## Apparatus.

### KALLITYPE NO. 2 "UP TO DATE."

THE Birmingham Photographic Company, Limited, of 100, Gladstone Road, Sparkbrook, Manchester, have forwarded for our inspection a specimen of the above process on albumen and matt-surface paper. The matt-surface print could not be told from the finest example of platinum printing, and the albumen surface print is very pleasing. Many a time and oft are we asked how to obtain black tones on albumenized paper, and we now can confidently recommend Kallitype No. 2 as the only process that will enable the amateur to attain this frequently-desired result. For professionals it ought to lead to increased business. These specimen prints will be framed and hung up in our office as ornaments, and for the instruction of visitors, to whom we shall be pleased to show them.

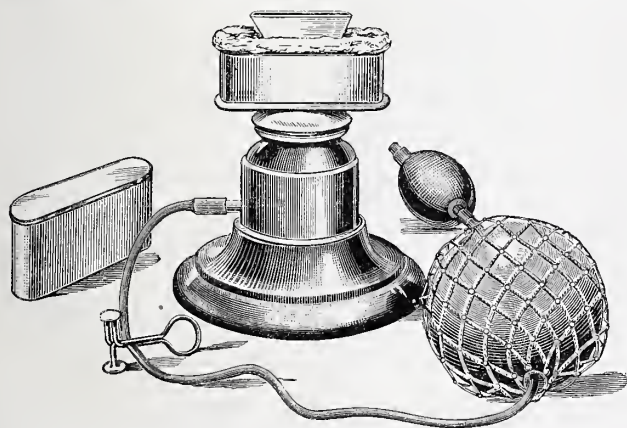
### DAVENPORT'S PORTABLE STUDIO.

We paid a visit last week to Messrs. Davenport and Co., 32, Parkhouse Street, Camberwell, S.E., to see a new portable studio they have made. The whole is made of well-seasoned wood, dowelled and dovetailed, and is in three sections, which are easily taken to pieces and put together again. The studio we saw was 18 ft. long, with an 8 ft. roof and side lights, and was supported on 24 joists of 2 by 3 wood—the outside is weather-boarded and painted and varnished, and the interior left for the photographer's own taste to adorn. These studios can of course be made any length to order, and with any particular style of lighting, at about the rate of one guinea per foot run.

After examining and admiring the studio, we were shown a new cheap portable developing sink. The whole measures 24 by 18, and consists of a zinc-lined cistern capable of holding many gallons of water, and the sink and shelves and bottles all pack into the same, forming when closed a very neat, compact iron-bound box. There is plenty of room too for odds and ends of apparatus. It is specially intended for foreign travel, though even for home use it would be very convenient. The price of this new sink is six guineas, and it would form a very convenient piece of furniture for a society wanting the occasional use of a dark-room and sink. We cannot do more than refer to the now well-known Eveready dark-room, and other conveniences made by this firm, but we are promised another novelty shortly, when we shall give a note on the same.

### THE TODD-FORRET MAGNESIUM LAMP.

Mr. Andrew H. Baird, of 15, Lothian Street, Edinburgh, has sent us a specimen of the new magnesium lamp which he has placed upon the market. As will be seen from the illustration, the lamp consists of a reservoir for the magnesium, above which is the brass

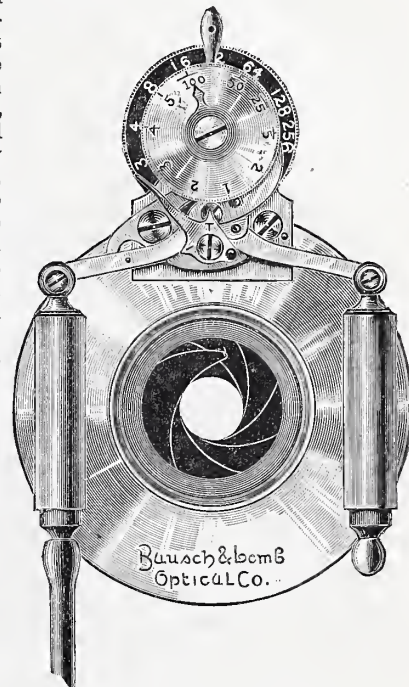


lamp which burns ordinary methylated spirit, and in the centre of the flame the narrow slit-like aperture through which the magnesium powder is blown. The india-rubber tube is compressed by the small metal clip, and the large air reservoir is then filled to its fullest extent—or as much as desired—by the india-rubber pump. When the air reservoir is completely full, pressure on the two heads of the clip instantly releases the volume of air, and the light thus produced by the magnesium is enormous. We have carefully tried this, and, testing Mr.

Baird's figures, we find the superficial area of the flame to be 1,150 square inches, and with an extra rapid plate and portrait lens, working at  $f/6$ , using the whole of the magnesium as quickly as possible, our plate was hopelessly over-exposed. The lamp may be used for continuous or flash-light, and can be used in batteries of two, three, or more lamps. This is certainly one of the most powerful lamps we have ever seen, and will be of great utility in practice. Full information may be obtained from the maker, and the lamp will be sent, post free, for 12s. 9d. We shall be pleased to show the lamp to any of our readers on Monday afternoon.

### THE NEW "DURO" CLOTH BINDINGS FOR LANTERN SLIDES.

Dollond and Co., of 35, Ludgate Hill and 62, Old Broad Street, are placing a very useful improvement in slide bindings on the market. They are made of stout buckram, and can be supplied in different colours in two widths at 1s. per box. The strips are  $3\frac{3}{8}$  in. long, and should be pasted with the ordinary or Stickphast paste, the lantern slide and cover placed in position on one strip, and the slip then folded over with a slightly stretching movement; this causes them to come close up to the full  $3\frac{1}{4}$  side, and when dry there is very great holding power. Each side being thus treated it will be found that the overlapping of the ends of the cloth bindings forms a little pad and prevents the glasses rubbing together, and the bindings are also protected from the effects of friction. All those who have had to handle a number of slides paper bound know how soon this is liable to wear out, and this little improvement will be found of great convenience. From our suggestion Messrs. Dollond are about to make stereoscopic slide bindings of the same material.



The same firm have also accepted the English agency for Bausch and Lomb's new Iris diaphragm shutter, which is extremely ingenious and is shown in the accompanying figure. To set the shutter the small handle at the top is moved from one side to the other, the pointer is placed to the speed index required, and the larger circle behind the handle controls the aperture of the diaphragm. Either time or instantaneous exposure can be obtained by manipulating the little lever below the speed index. The shutter, as is necessary for such a highly finished piece of mechanism, is rather high-priced, but the price includes two lens tubes to receive the lens combinations. The metal plates forming the iris work as smoothly and as evenly as possible, and there is not the slightest jar or vibration of any kind, even in the highest speeds.

Messrs. Dollond have also opened up a new department in the shape of electrical apparatus, and their prices will be found quite as reasonable, if not more so, than some of the other electrical agents. Doubtless many of our readers may like to fit up their own electric bells or even start an electric dark-room lamp. Messrs. Dollond are able to supply both material and information for these purposes.

**Richmond Camera Club.**—The Richmond Camera Club beg to intimate that the entertainment postponed from January 15th will, take place on Friday, February 19th, at the College Hall, Richmond at 8 o'clock p.m. The invitations already issued will be available for the latter date.



## Elementary Photography.

BY JOHN A. HODGES.

### CHAPTER III.—ACCESSORY APPARATUS.

Focussing Cloths; Velvetten, Mackintosh, etc.—Camera Cases; Necessary Caution—Non-actinic Lamps—Dishes; Good Advice—Plate Washing Tank—Another Method—Measures—Draining Rack—Printing Frames, etc.—The Chemicals Required—How to Preserve their Properties—Pyrogallie Acid—A Word on Poisons—A List of Chemical Substances Necessary—The Cost—The Use of the Brush.

ASSUMING that the advice given in the previous chapters has been acted upon, and that camera, lens, and tripod stand have been selected, we may now turn our attention to the various minor apparatus which it will be necessary to purchase before we shall be ready for work.

A focussing cloth will be required. Velvetten makes a good one—or black twill may be used, but in the latter case the material must be used double, in order to get sufficient opacity. Waterproof cloth or thin mackintosh is sometimes recommended, but I cannot advise its use, for in hot weather the heat is unbearable, and the perspiration from the body condenses on the ground-glass and interferes with focussing. Whatever the material, the focussing cloth should be of good size, say, 3 ft. 6 in. by 3 ft.

A case of some kind, to contain the camera and slides and other apparatus necessary for use in the field, must be obtained. These are generally made of leather, waterproof cloth, or canvas. The latter are far to be preferred in that they are very much the lighter. A leather case is, of course, more durable, and affords greater protection to the apparatus, but, on the other hand, it will very often weigh as much as the camera itself, and will, consequently, add very much to the fatigue of carrying the apparatus. A light collapsible case of either waterproof cloth or canvas should therefore be chosen, care being taken to have it fitted with a reliable lock. Make it an invariable rule never to leave the case unlocked, for it should not be forgotten that servants and children, and sometimes more responsible individuals, are frequently of an inquisitive turn of mind, but if the above precaution be taken much disappointment and annoyance will be avoided.

A non-actinic lantern will be required, patterns of which are shown in figs. 8 and 9. It is immaterial which is selected. Do not, however, choose too small a one or the combustion

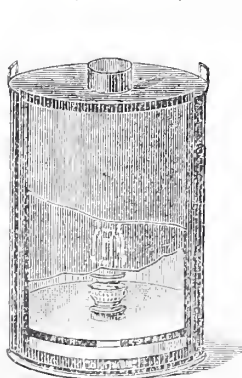


FIG. 8.

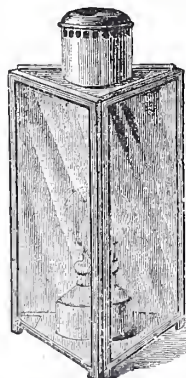


FIG. 9.

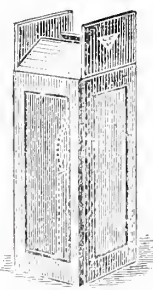


FIG. 10.

will be imperfect. For travelling purposes one of the folding pattern lamps will be the most convenient, in which coloured fabric takes the place of ruby glass. These are triangular in shape, and pack quite flat (fig. 10).

The various manipulations which the sensitive plates and papers used by the photographer undergo before they become finished pictures are usually carried out in shallow dishes or trays which are constructed of various materials. It will be

necessary, therefore, to purchase several of these of different sizes. Each dish should be reserved for one particular purpose. One of the so-called secrets of success in photography is the observance of strict cleanliness in all the operations, and the avoidance of the least mixing or contamination of one chemical with another; the slightest trace of a foreign substance in some of the solutions will be fatal to good results. We shall require one black half-plate ebonite tray for developing our negatives, and one white one of the same size to be only used for a process, hereafter to be described, called intensification. A deep white porcelain dish, 8 by 5, will also be wanted to contain the fixing bath. I recommend different materials and colours, as the beginner will then get accustomed to using a particular dish for a particular purpose, and will be less likely to make mistakes. He will also require, for the various operations connected with printing from the negatives, four 10 by 8 deep porcelain dishes. Purchase at the same time a bottle of "artist's black," and with a small brush write on the outside edges of each dish one of these inscriptions; this will aid in keeping each dish to its proper use:—(1) Toning dish, (2) washing dish, (3) Fixing dish, (4) Fixing dish for bromides.

A zinc plate washing tank, with grooves to hold the plates vertically, and with a syphon to carry off the contaminated water from below the plates, is a very great convenience, if not a necessity; the price will be about six shillings. A cheaper but less satisfactory method of washing negatives is to place them face upwards, in a large porcelain dish, changing the water at frequent intervals.

Some graduated measures for making up solutions and holding developers must be procured. One of 8 oz., two of 4 oz., and one of 1 dram. capacity should be chosen.



FIG. 11.

A wooden plate-draining rack (fig. 11), for stacking the plates upon after they have been washed, and while they are drying, will be required.

Some printing frames, of half-plate size, for holding the negative and paper during printing, most also be obtained. The pine frames are the neatest, and cost about 1s. each. These will be sufficient at first.

A pair of scales and weights with glass pans, and a set of grain and drachm weights, will nearly complete the list of requisites.

I have, as yet, said nothing about chemicals, but I shall proceed to give a complete list of those that will be required. All chemical substances when in the form of either crystals or powder should be preserved from the effects of the atmosphere by being kept in either wide-mouthed glass bottles or jars. These can be purchased at very small cost, or even ordinary pickle jars, which have been thoroughly cleaned and dried, may be employed, provided they are fitted with a sound bung, which may be made to fit tighter, and at the same time will be more easily removeable, if a circular piece of clean wash leather, slightly larger than the bung itself, be first of all wrapped round it. Some substances, from their volatile or corrosive nature, require to be kept in stoppered bottles, and these will be denoted by an asterisk. It is, presumably, unnecessary to add that all chemicals and solutions should be stored out of the reach of children, and by preference kept under lock and key. The amateur who has no chemical knowledge should be informed that many of the substances which he will have occasion to employ are exceedingly active poisons, therefore the necessity for caution will be apparent. It is unnecessary to add that all bottles should be properly labelled—books of labels can be purchased for about 6d.

(To be continued.)



## ILLUSTRATED SUPPLEMENT,

FEBRUARY 12, 1892.

## Monthly Competition, No. 32, "Inland Scenery, with or without Figures."



HE prints have, we think, reached the highest number ever sent in to one of our Monthly Competitions, but we regret to state that the quality of work is decidedly lower than usual. Many of the prints are characterised by great carelessness both in printing and mounting, and some are utterly devoid of either artistic or technical merit.

PATERSON, J. D. (Birkenhead).—"Stepping Stones, Raby, Cheshire." This print (half-plate) (reproduced No. 1.) is awarded the Silver Medal. It is taken with Newton's Ortho-panactic lens on Ilford ordinary plate, which received 10 sec. exposure in sunshine about 4 p.m. It would have been improved if rather less, about 1 in., of foreground and a little more sky had been included; and it would certainly have been advisable to use a backed plate so as to avoid the halation at the top of the picture. The print is full of sunshine, and the operator has evidently taken considerable trouble to pose and compose the same.

ACRON, Miss M. (Pau).—"A Hampshire Cottage:" a pretty little bit (7 by 4½), typical of an English village, taken at 3.30 in a dull light with R.R. lens, *f*/22 stop, on Ilford ordinary, with 6 sec. exposure. It is unfortunately printed on deep pink-tinted albumenised paper, with a perfectly blank sky, and the print shows innumerable cracks at one end. A matt-surface print with a suitable sky would have considerably improved it, but we hope to see better work from this competitor, as there is considerable promise in that before us.

AINSWORTH, W. R. (Alton, Staff).—"The Valley of the Churnet:" half-plate, taken with Lancaster's R.R., *f*/32, and 2 sec. exposure on Ilford ordinary. The print, which is bromide, developed with ferrous oxalate, is far too panoramic in character to be picturesque, and though the sun was shining strongly at the time of exposure, the print is wanting in brilliancy and pluck,

ANDERSON, W. S. (Edinburgh).—"Watching the Photographer" represents some cattle looking over a broken-down wood fence, which is extremely offensive, artistically, from its straight lines. The plate, an Ilford special rapid, was underexposed with 1-10th sec., drop-shutter exposure in diffused daylight in August, with Lancaster's landscape lens, and *f*/18. Some fine, but quite unsuitable, clouds have been carefully printed in.

ANNESLEY, Miss E. (Pau).—"A Village Inn, Lescar, Pyrenees." The print (half-plate, bromide, iron-developed) represents part of a street in Lescar, now a tumbledown village near Pau, formerly a cathedral town of some importance. An Ilford plate, with R.R., *f*/16, and ½ sec. exposure in bright sunshine, 2.30 p.m., should have given far better results than now sent. At least 1 in. might be spared from the foreground, which is far too black, and a longer exposure to the paper and weaker developer would have given more harmonious and pleasing results.

APEL, A. M. (Hastings).—"Eton College from the Brocas:" possibly cut down from a half-plate print, and though good tools were used, Voightlander's Euryscope *f*/22, cap off and on, Ilford plate and bromide paper, the result is a flat, heavy, uninteresting strip of scenery.

ASHBURN, W. D. (Upton Warren).—"Weeds and Willows in Winter:" a half-plate Paget xxxxx. plate received 25 sec. exposure in fairly bright diffused light at 11 a.m. in December with

Taylor's R. R. and *f*/45. The print, platinotype hot-bath, is a very pleasing representation of a typical winter landscape, and had the foreground been accentuated by one or two darker points so as to relieve the flatness the picture would have probably scored. We shall hope to see better work from this competitor in the future.

ATKINS, DR. RINGROSE (Waterford).—"Mount Ithome, and the Monastery of Vourkounia, Peloponnesus:" "Ithome is a



No. 1.]

"STEPPING STONES."

SILVER MEDAL.

[J. D. Paterson.



name famed in the history of ancient Hellas. On the mountain top, in very early days, stood the altar of 'Zeus Panhellenios,' whereon human sacrifices were offered. In later ages Epaminondas, the Theban, after his final victory over the Spartans, built a city at its foot for his Messenian allies, near the site of their ancient capital, and he crowned the mountain with its Acropolis. The mountain still remains unchanging and unchanged, the city has gone, the ruins of some fragments of its gates and walls alone remaining to tell us that it once was. A deserted monastery, well-nigh ruined, supplants the fortress on the mountain summit, its sole inhabitant a lonely hermit, who from his lofty eerie keeps watch and ward over the rich Messenian plain. Below, on a shelving terrace, stands the monastery which has taken its place; worn and unkempt, it still holds its influence and affords shelter and hospitality to the wayfaring traveller, who may wish to stay his steps to trace out the ruins of the bygone city." A whole-plate print, taken on a Fitch xylonite film, sens. No. 22, with 2 sec. exposure, with a W. A. R., in an

his under-exposed Castle quarter-plate and Lancaster's Instanto lens, working at  $f/10$ , by 1-10th sec. exposure, has been happy enough to miss a picture.

BATELL, W. J. (Walthamstow).—"Chingford Old Church:" a very fine half-plate print, technically perfect, with a magnificent gloss on it, but artistically extremely poor; a hard fence-line in the foreground and two boys, one with his feet cut off and hat on one side, do their best to spoil it; but, not content with this, the end of chance is cut off by the operator.

BELLEY, A. C. (Roundhay).—"Boating Station, Roundhay Park, Leeds:" a half-plate print, which possibly might be considered as more suitable for Competition No. 33. Was taken with Marion's R.R.,  $f/21$ , on an Ilford ordinary, 5 sec. exposure, at 4 p.m., with heavy clouds about, and "at the very moment of exposure it really began to snow. I had the patience of Job, and succeeded in getting this picture as the result," which would be much improved by the cutting out of the obtrusive boughs of the tree at the top.



No. 2.]

EVENING.  
(BRONZE MEDAL.)

excellent light at 7.20 a.m. in May. There is a little too much foreground, and had a longer focus lens been used we think a more pleasing result would have been obtained. The print on Ilford printing-out paper is slightly wanting also in the brilliancy necessary to give one the idea of sunshine.

———. "Evening," No. 2 (Bronze Medal). The competitor has forgotten to enclose his entry form, therefore the bronze medal goes begging.

BALL, G. DE B. (Ballynagore).—"Thank you, That will Do:" a half-plate print, on Ilford printing-out paper, representing some sheep in a road in winter, taken with an R. R.,  $f/16$ , with 2 sec. exposure, in bright diffused light, between 12 and 1 p.m., on Pall Mall extra-rapid plate. This worker is evidently one of the "fuzzy" school, as we look in vain for any plane of sharp focus; equally fine results could be obtained without a lens if desired.

BALL, F. R. (Clapham).—"Rothsay Ruins." Ruins are, as a rule, good subjects for artistic work, but this competitor, with

BEILLEY, E. G. (Edinburgh).—"St. Bernard's Well:" a half-plate print on pink silver paper, taken with French R.R.,  $f/22$  and 14 sec. exposure, at 10 a.m., in dull, diffused light, on a Castle plate, and which has no artistic or technical good points.

BARTON, W. T. (Morrison).—"The Moat, Eltham:" taken with Ross R.S.,  $7\frac{1}{2}$  in.,  $f/64$ ; 13 sec. exposure, at 12.30 p.m., on Wood's Trafalgar half-plate. Much over-exposed, and paper did not lie quite flat in printing, and an extremely artistic bridge is cut right in half, which, we need not add, would spoil any artistic merit it might otherwise possibly possess.

BELL, THOS. C. (Belfast).—"Glenoe Village, co. Antrim." Given such a charming little spot as is here seen, it is to be regretted the operator has not made more of his opportunities. The print is wanting in life; everything is still, hard, and dead; a rather lower point of view, and a figure or two would have rendered this a perfect picture. Taken on a Britannia half-plate, with 8 sec. exposure, Suter 3 B,  $f/32$ , in good diffused light; both negative and print technically perfect.



BETJEMANN, G. R. (London).—"Broadiney, near Weymouth:" Beck's R.R.,  $f/16$ ;  $\frac{1}{2}$  sec. exposure in fair light, at 3 p.m., on an Ilford ordinary; print on Ilford bromide, developed with Rodinal, and toned with uranium. This is a half-plate print, and the competitor, anxious to have his pound of flesh, has spoilt the picture by too much foreground. An incongruous figure leans over a bridge, and mournfully "pores upon the brook that babbles by," whereas had a ragged barefoot urchin or two been placed in the foreground fishing, and the whites been preserved, it might have scored heavily.

BIBEY, W. H. (Blackburn).—"The Silent Trees:" a disappointing half-plate print, from Ilford ordinary; exposed, at 2 p.m., in bright sunshine, with French R.R., smallest stop, and 10 sec. exposure; Ilford printing-out paper; matt-surface obtained by use of pumice powder. The competitor states this was taken in bright sunshine, but there is no sign of it in the print, which is flat, muddy, and detailless.

BILSON, D. (Holmfirth).—"A Yorkshire Sheep Washing:" R.R., 9 in.,  $f/8$ ; cap off and on; bright midday;  $\frac{1}{2}$  plate; Ilford albumenised paper, toned with sulpho-cyanide bath. This is an instantaneous (?) print which has neither artistic merit nor the usual technical excellence of sharpness of moving objects. There are about twenty-five figures within the limits of the print, and they all know they are "being took," and look as though they liked it.

BIRD, MRS. E. (Kington).—"Ruins of Huntingdon Castle." A narrow strip of subject, about 2 in. wide, with horizon line running through the centre, and duplicated by a lower line of a field of stubble which is all out of focus, does not make a picture. Taken with a Wray R.R.,  $f/11$ , 2 sec. exposure on Ilford ordinary.

BLOOMFIELD, H. W. (Upper Norwood).—"Jack Frost," a quarter-plate study of frost and snow, taken with Lawley's R.R.,  $f/11$ , and 5 sec. exposure, in diffused, hazy light, on an Ilford ordinary. The print, which is on bromide, does not do justice to the negative, and there is far too much generalisation rather than concentration of subject.

BREEZE, J. (Southport, Lancs.).—"Cartmel Vale, Lancs.," a half-plate panoramic view with a hideous hedge in the foreground, printed far too dark, considering it was taken at 1.20 p.m., in moderate sunshine, on Pall Mall extra rapid plate, with Ross' P.S.,  $f/22$ , and 1 sec. exposure. The print, on Ilford printing-out paper, is an evening scene, and not midday, bright and sunny as it should be.

BOLTON, C. P. (Waterford).—"The Leap," taken on an Ilford ordinary quarter-plate, with single lens, 4 sec. exposure, in the afternoon in the autumn, is a by no means pleasing representation of a small waterfall in the grounds of the competitor; the right bank is far too black and heavy, and the left

part too patchy and out of focus, and the black tree bole at the top righthand corner is neither good technically nor artistically. It would be advisable to try this again to see whether better results could not be obtained.

PERKINS, MRS. E. A. (Shaftesbury).—"A Bye-Street in a Dorset Village," which we have reproduced as No. 3 (Certificate), is technically a perfect bromide print: artistically, as will be at once seen from our reproduction, it wants some opposing lines, which probably could have been easily obtained in the shape of clouds. The roofs and the outline all run to one side. Taken with Wray's W. A. R., 10 in. focus,  $f/32$ , 12 sec., 3 p.m., in dull light, in September, on Marion's Britannia. "The negative from which this print is made is my first unaided attempt at photography. I have exposed a few plates on other subjects

before, and developed them with my husband's help. The print, too, is my first attempt at bromide printing." We congratulate the Rev. T. Perkins and his wife, the one on his powers as instructor, the other as pupil, and certainly we shall expect to find the pupil outstripping her master, and taking the AMATEUR PHOTOGRAPHER Gold Medal.

BORRADAILE, MISS E. F. (West Hampstead).—"Chambercombe Farm:" half-plate Ilford ordinary, R.R.,  $f/32$ , 2 sec. exposure. The silver print either was not firmly fixed in the frame, or else the focus was not accurately obtained; both sides of the print are too black, and sunshine there is none, though evidently by the shadows such existed at the time of exposure, which was noon. The print is carelessly trimmed, and shows innumerable cracks from rough handling.

BRADBURN, S. J. (Manchester).—"Pont-y-Pair, Bettws-y-Coed:" or we should say part of it only, as the "Pont" is cut in half, and some in-artistic tourists pose on the parapet, one with obtrusive leg and foot. The print is on gelatino-chloride paper, with a magnificent glaze and perfect in detail, and the negative is on a Thomas's Extra

Rapid, taken with a Wray's R.R.,  $f/32$ , 4 sec. exposure, at 1.45 p.m., in "little sun, rather hazy." A little sun shining on the water would throw up reflected light on the underneath part of the bridge arches and relieve the intense blackness, which could be improved by yellow matt varnish on back of negative.

BRANTHWAITE, R. W. (Rickmansworth).—"Shanklin Chine:" taken with Ross' R.S.,  $10\frac{1}{2}$  in.,  $f/45$ , 14 sec. exposure, bright sun in March, at 11 a.m., on Wratten ordinary whole-plate. The competitor says, "Taken as a study in lighting, the bridge in Shanklin Chine in winter with the sun shining right down the glen." Possibly as a study in lighting it may be good, but artistically it is not so.

BRIGHT, STANLEY C. (Genoa, Italy).—"Summit of M. Caravogli:" on which is seen a chapel which is visited by pilgrims



No. 3. "A BYE STREET IN A DORSET VILLAGE." [Mrs. E. A. Perkins. (CERTIFICATE.)]



once a year. Taken with Lancaster's half-plate Instanto,  $f/32$ , 1 sec. in bright sunshine at 11 a.m., with intensely blue sky; printed on rough Alpha paper. Mr. Bright can do far better work than this, and ought not to have sent in such a specimen of inferior quality.

BROCKHOLS, C. M. F. (Garstang).—"Rustic Cottage:" a whole-plate cottage, too; taken with Wray R.R. in wet and changeable weather. There are far too many straight lines, and the fowls which might relieve are fuzzy, and the print is too darkly printed.

BRODIE, G. (Aberdeen).—"In Hebers Ghyll, Ilkley," a quarter-plate Britannia, was fearfully under-exposed with an R.R.,  $f/16$ , off and on in August, strong sun, about 11 a.m. The print on Ilford bromide represents a rustic bridge in the middle of the print, with a young lady standing in the middle of the bridge. The background is blurred by halation, and the foreground out of focus. The print is greenish from under-exposure, and the best part of it is some fine elm leaves, which are very obtrusive at the top of the print.

BROOK, T. MORLEY (Withington).—"Between the Showers:" taken with Ross R.S., 9 in.,  $f/11.3$ , about 1-15th sec. at 10 a.m., on an Edwards' Iso instantaneous, print on Blanchard platinum. This competitor hardly grasped the possibilities of his subject. Had the print, which is half-plate, been taken the other way of the plate, it would have been far more pleasing, as the low-lying background is now too much for the one upright mill.

BROWN, J. L. (Inverness).—"Bught Mill Lade." This is a good specimen of all that should be avoided in picture-making. It is of half-plate size, taken on a Paget xxx. plate, about 8.30 a.m., in not very bright light, with an exposure of 1 min., with an old wet-plate camera and single lens. The horizon line cuts the picture in two, and it represents a bridge on a snowy day, and the sky is as white as the snow, and this is as white and detailless as a badly developed, carelessly mounted, and untrimmed bromide print can be. The ice in the small stream is pitch black, only rivalling the tree trunks in inkiness.

BRYANT, G. E. (Manchester).—"Harvest Time:" taken on a Thomas extra rapid with Laverne R.R.,  $8\frac{1}{2}$  in.,  $f/22$ ,  $1\frac{1}{2}$  sec., in September, in sunlight, at 3.30 p.m. This is, again, a disappointing print on Ilford printing-out paper, toned with sulphocyanide. It is flat, grey, sunken in and without sunshine, the fault entirely of the operator. A good picture could be made from this, but evidently the technical knowledge is wanting.

BULL, E. R. (Wolverth).—"Alton Castle from the Churnet Valley:" taken on a Thomas extra rapid whole-plate with one combination of Optimus whole-plate Eury scope working at  $f/64$ , and 24 in. focus, in fairly bright light, at 7 p.m. The print on Ilford slow bromide paper developed with quinol and cikonogen. This is a charming spot, but rhubarb leaves as a foreground, and under-exposed trees crowding on to them, with a magnificent distance, do not make a picture. The operator has missed his chances.

BARROW, J. (Pudsey).—"Hough Wood, Pudsey." The poet Campbell talks about distance lending enchantment to the view, "and clothes the landscape in its azure hue," but our competitor improves on the poet and art, and sends in a quarter-plate print on Alpha paper toned with borax to a bright blue all over. The negative was taken on an Ilford ordinary, with  $1\frac{1}{2}$  sec. exposure, at 3 p.m. We warn this competitor that, no matter how artistic the picture, technical requirements would compel the judges to withhold a prize to a blue-toned print like the one sent, utterly untrue to nature and art.

CUFFLEY, A. J. (Leytonstone).—"Poyning's Village, from Devil's Dyke:" taken with an R.R. lens, with 1 sec. exposure, about mid-day, on half-plate Ilford ordinary. "Negative and print quite untouched," a needless piece of information, as the poor print speaks for itself.

CANDY, MISS L. (Alton).—"A Country Lane in Hampshire." As a frost scene this is by far one of the finest we have

ever seen, and it is to be regretted that a good bromide or platinotype print from the negative was not sent in. Taken with a Dallmeyer R.R., No. 3 stop, 8 sec. exposure, on an Edwards' Isochromatic half-plate, about 12.30 p.m. Artistically the picture wants a little life in it, and rose-coloured snow is neither true to nature nor art.

CHAMBERLAIN, JOS. (Tunbridge Wells).—"Scotney Castle:" half-plate Ilford ordinary, exposed for 4 sec., 4.30 p.m., in May, with Optimus R.R.,  $f/32$ . "This was taken on one of our excursions; it had been a pouring wet morning, but turned out a brilliant afternoon, so remarkably clear. The water is the moat round the old machicolated tower of Scotney Castle." Though taken in brilliant weather, there is no brilliancy in the print, there is far too much foreground, and the brother amateur far too prominent. Had one of the combinations of the lens been used alone, more pleasing and artistic results would have been obtained.

CHAMPNESS, A. F. (Sydenham).—"Patchway Green Farm:" taken with a single lens, "stop not numbered, only pieces of tin in front of lens hole  $\frac{1}{4}$  in. diameter," exposure 3 sec. in a bright light, at 10.30 a.m., in June. Wratten's ordinary half-plate. This print is characterised by a stone wall in the foreground, which gives the idea of patchiness and unrest; the farm is quite the secondary subject, instead of the primary interest in the picture.

CHURCHILL, C. (E. Greenwich).—"Old Town House, Ightham, Kent:" this is a prize picture spoilt, technically good, brilliant with sunshine, and a charming place, as we know from many a pleasant hour spent there. The competitor has been careless enough to cut off the tops of chimneys, and also to rob the scene of life. It was taken at 9 a.m., with  $f/45$ ,  $1\frac{1}{2}$  sec. exposure, and the print is on Eastman's rapid bromide paper, developed with hydro-cum-eikon.

CLARKE, THOS. (Witley).—"Lower Mousehill Lane, Surrey:" a half-plate view taken with Stanley's R.R.,  $f/64$ , taken on an Ilford plate on a very dull day, and the competitor has intensified this dullness by the choice of his printing process, and by cutting out all life in the picture. Even without life a brilliant print, which could be easily got from the negative, might score. It is a charming scene, and a well-chosen point of view.

CLARKE, W. J. E. (Sidcup).—"The River Darent at Eynsford:" a pretty little quarter-plate bit spoilt by over-printing, taken with a Wray's R.R.,  $f/16$ , 1 sec. exposure in sunlight, on Ilford ordinary.

CLEAL, W. J. (Bridport).—"A Bit of a Dorset Road." Lancaster's Instanto, working at  $f/22$ , and 1 sec. exposure in sunlight at noon in June, on Thomas's extra rapid, has produced a flat and not artistic quarter-plate view of which at least, 1 in. might be spared from the foreground and which is not improved by drunken architecture.

CLIFFE, W. T. (Castleford).—"View in Castle Donington:" taken with Wray's R.R.,  $f/22$ , on Castle whole-plate, with  $\frac{3}{4}$  sec. exposure in sunlight at 11.30 a.m., and printed on Ilford chlorido paper. Had the knife been used unsparingly and some of the ugly figures and foreground been cut out, it would have been much improved.

COLE, J. H. (Innishannon).—"The Village Forge:" taken with Dallmeyer's R.R., full aperture, on a Paget ordinary, in a dull light at 5 p.m. in March, in 3 sec. The unnecessarily long and over exposure has helped the disturbing stone fence to spoil a picture. Probably another try, with less foreground, less exposure, and a little more brilliancy, will win a prize.

COOPER, MISS B. (Silchester).—"Netley Abbey:" taken with Beck's R. R.,  $f/22$ , in 5 sec., in bright diffused light, mid-day, on Thomas' T. C. L. half-plate. A good chance spoilt—part of the abbey only is included; the camera was not upright, and the print is far too dark.

COOPER, W. HARGREAVES (Bacup).—"Village of Eydon:" a



12 by 10 enlargement, we think, from a Barnet plate, exposed for  $1\frac{1}{2}$  sec. in June with Lancaster's Rectigraph,  $f/20$ . A little too much foreground and a boy placed rather too prominently do not improve the artistic qualities of the print, which might have been more sharply focussed.

CORNU, MISS M. L. LE (Jersey).—"Di Vernon's Steps:" a half-plate print on Celerotype, from Ilford ordinary, given 4 sec. exposure at 10 a.m. in subdued light with Lancaster's Instanto. The camera was not quite upright, and the print is rather too deeply printed, and too strong a gold bath was used. There is considerable promise of good work, and we shall hope to see better work in future.

COULSON R. (Pudsey).—"A Plain Landscape:" a pretty little quarter-plate bit of landscape, taken with French R. R.,  $f/16$ , 3 sec., in November, in sunshine at 3 p.m., on Ilford ordinary and Ilford P. O. P. Although the competitor states the particular idea was to get a sunlight effect, we cannot congratulate him on the result.

CROW, V. T. (Louth).—"Rams in Clover:" taken on "Castle" quarter-plate with Lancaster's instanto lens,  $f/11$ , in bright light, noon, in August—printed on Smith Simplex paper. Although taken in sunshine with deep shadow, it gives no idea of the same, and a very unsuitable cloud negative has been used.

CROWTHER, W. S. (Pudsey).—"Farnley Wood." An Ilford ordinary quarter was given 2 sec. exposure in May, at 4.15 p.m. in moderate light; and an Eastman bromide print developed with hydroquinone is sent, and is far too black and heavy; a figure placed right in the middle of the picture hardly lends any charm.

CROZIER, J. W. (Hexham).—"A North Country Thatch:" Optimus R.R.,  $f/16$ , 15 sec., in dull light in June at 3 p.m., on Ilford ordinary half-plate. Technically a good print, but not possessing much artistic merit, the figure being evidently "waitin' to be took."

DART, W. B. (Torrington).—"In the Country:" a quarter-plate snap shot with a Swinden and Earp hand-camera on Paget xxx., in the afternoon in sunlight—Obernetter paper toned with sulphocyanide. A good chance spoilt; far too much foreground spoils a pretty little country village scene of three cows being driven up the street. All the elements of a picture are here, but the operator has missed his opportunity.

DAVIS, H. J. B. (Bristol).—"View from Stoke Bishop Church:" a Ross R.R.,  $f/16$ , 3 sec., Ilford half-plate, sunny light, 11 a.m. in October. Printed just a shade too deep, otherwise, technically, a perfect print of a panoramic view.

DENHAM, WM. (Leeds).—"Cottage at Grange." A Barnet half-plate received 4 sec. exposure, at 11.5 a.m., June 7th, with  $f/32$ , and Wray's R.R. The plate was over-exposed and suffers from halation, but the platinotype print sent in is very good, and only wants trimming as to the foreground.

DILLON, HON. MISS E. (Wychwood).—"Ashmore:" a whole-plate silver print of some cows drinking in a wayside pond. The lens is far too wide-angled and there is a falling off of definition at the margins, and nearly half the print could be cut off with an increase of artistic effect.

DOUGLASS, MISS S. E. (Perth).—"Tvindefos Waterfall." An Ilford ordinary was given 1 sec. exposure at 10 a.m., in bright light, with Lancaster's Instanto, working at  $f/16$ . This was taken the wrong way of the plate, the dark-slide shutter was not completely pulled out, and the print is poor and flat. We have seen far better work from this competitor.

DRAPPER, WM. (London).—"Snow Scene:" an Ilford quarter-plate ordinary, with Lancaster's single view lens, was given 6 sec. exposure in dull light, in January. The silver print is a rich warm brown, quite unsuitable, and the snow is white paper absolutely without detail, due to the use of too much reducing agent in the developer.

DREW, REV. J. (Chipping Sodbury).—"The Parish Church:"

Thomas' Ex. Rap., a Ross' triplet,  $f/20$ , sunlight, platinum printing out. Taken the wrong way of plate, print too dark, and absolutely without sunshine.

DRIVER, W. R. (Liverpool).—"St. Michaels-in-the-Hamlet:" Thomas' E. R. single lens,  $f/11$ , 3 sec., bromide paper print developed with hydroquinone. As the competitor states, this was his first attempt with a camera on a stand, we will not be too hard on him, but advise him to always see his camera is upright, or else he will get drunken architecture, as in the print sent, which is fearfully under-exposed and badly stained and over-developed, without a clear white in it anywhere. Bromide paper should not be tried until some of the other and simpler processes are mastered.

DURRANT, H. (West Bromwich).—"Betwixt the Trees the Landscape Lay:" taken with a quarter-plate Meritoire, with  $\frac{1}{2}$  sec. exposure, on Lancaster ordinary. A flat, and by no means artistic, print of a road and a brick wall.

DUTTON, R. H. (Crewe).—"In Grosvenor Park." A half-plate Ilford ordinary, exposed for 3 sec. in bright sunshine, at 11 a.m., on Lancaster's Instanto, has yielded on Eastman's bromide paper a flat heavy print, with intensely black shadows, and of which, at least,  $1\frac{1}{2}$  in. of foreground might be spared.

EDEN, J. A. (Heath).—"Winter Scene." We have here an example of the misuse of a wide-angle lens; far better results would have been given artistically with an ordinary or narrow-angle lens. A backed Ilford half-plate ordinary was exposed for 20 sec. on the 9th ult., with Wray's W. A. R.,  $f/32$ . Notwithstanding the fact that this competitor was extremely careful to get detail in his negative and then density, there is far too much white detailless expanse, which is not pleasing.

ELLAM, J. E. (Yarm).—"Homeward Bound." This is a failure; the print technically is good, and considerable pains have been taken to pose the figure, but the result is a failure. It represents a youth with absolutely white shirt-sleeves, carrying a cord of wood tied with a bit of thin string over his shoulder; and the sky is a blank. Had suitable clouds been printed in, and an old man in torn and not too clean smock been represented, justice would have been done to the charming little rustic bridge and surroundings. A Fitch film was exposed by aid of a Wray's single lens, working at  $f/11$ , for 6 sec., in September, at 7.15 p.m.

EMSLEY, FRED (Leeds).—"Meanwood Valley." A Barnet half-plate was exposed for 15 sec. in diffused light, with R. R. and  $f/32$ , at 5 p.m., in April. Had a larger stop been used and the distance thrown slightly out of focus, a much more pleasing result would have been produced; as it is now, the distance, middle planes and foreground, are all jammed up into one plane. Probably far more pleasing results could be had on bromide or platinotype.

ELLIS, E. N. (Wavertree).—"The Old Mill:" half-plate gelatino-chloride print from Edwards' special instantaneous plate; exposed for  $\frac{1}{2}$  sec., at 10 a.m., in bright sunlight in May. A decidedly artistic old mill, but which the competitor has not treated from the most artistic point of view.

ELLSWORTH, W. S. (Hayton).—"Holker Hall:" taken in September on Ilford ordinary, 8 by 10,  $f/32$ ; 4 sec. exposure, good, bright light. This possesses melancholy interest, as being the place where the late Duke of Devonshire died. As a picture, at least three inches could be spared off the foreground.

FITTON, JOHN R. (Oldham).—"A Quiet Afternoon:" Castle half-plate; exposed for 2 sec., Wray's R.R.,  $f/22$ , 3 p.m., in September in sunlight. A very pleasing little bit, well exposed, well printed, toned, and mounted, and is well composed; only a mock fishing-rod and some curious patchy water detracts from the *tout ensemble*. One of the few prints in this competition in which there is sunlight.

FAWCETT, MISS C. (Durham).—"Village of Ferrera:" Fry's celluloid film, half-plate, exposed with Watson's R.R.,  $f/32$ , cap off and on, in bright light, at 11 a.m. in May. The print—hot-



bath platinotype—is a little flat and grey, and would have been improved by a deeper black in the foreground.

FORMAN, E. H. (Louth).—"Glen Helen." This competitor is only a twelve months' worker, and used a Lancaster single lens,  $f/32$ , in May, in fair light, at 2 p.m., 3 sec. exposure being given to Castle plate. The print would, we think, have been improved had it been taken the other way of the plate, there being hardly sufficient sky.

FORMAN, H. S. (Louth).—"Colwith Force:" a six months' worker, Lancaster's single lens,  $f/16$ , 4 sec., September, noon, dull light, Castle plate. This is a difficult subject even for an old hand, and has proved too much for six months' experience. The only satisfactory method of getting good results of waterfalls is to take two negatives, one with long exposure for rocks, and one short for the water. The artistic qualities are not improved by an oval mount.

BAXTER, GEO. (Birmingham).—"Watering the Horses:" taken on Marion's White Label: noon, very good light, R. R.,

in August. Two youths, with towels hung round their necks, stand in a lane shut in on each side by leafy trees. The whole of the top of the print is out of focus, and it is generally flat and has no distance at all.

GAST, S. A. (Louth).—"A Quiet Moment." A Castle quarter-plate, R.R.,  $f/22$ , 2 sec., at 3 p.m., in good light in April, have given a fine tree study, utterly spoilt by an incongruous small boy fishing with a walking-stick, and staring straight into the camera. This shows good technical work, and as the competitor is a first year's man, we hope to see more artistic work in future.

GADDUM, MRS. S. E. (Altrincham).—"Loch Stack:" evidently we have here one of the "naturalistic" school, and we regret that we cannot approve of the result. There is no sharp plane of focus, and the platinotype print is too black and heavy. Taken with Ross R.R., 2 sec. exposure, at 1.15 p.m. in medium light, in September.

GEEKIE, ALEX. (Coupar Angus).—"Glen Shee:" a panoramic view of a charming country, but, as a picture, possessing little interest. Taken with R.R., working at  $f/32$ , with 4 sec. exposure, at 3.30 p.m., in sunshine in September. This is a first year's man, and he informs us that he has made all his apparatus from camera to burnisher. The print shows good technical work.

GEEKIE, S. G. (Coupar Angus).—"On the Banks of the Tay:" a pretty little quarter-plate bit, taken on an Ilford ordinary, with single lens,  $f/22$ , at 4 p.m. in August, with 20 sec. exposure, in diffused sunshine. "This was just my second outing with my camera," says the competitor, and we congratulate him on sending in a technically perfect print, which is spoilt artistically by a kneeling figure in the centre of the picture.

GIBSON, J., JUN. (Hexham).—"Lake Derwentwater:" taken on an Ilford White Label, with "Optimus" 3 by 4, working at  $f/8$ , in July, at 1 p.m., in broken sunlight. A very good study of light and shade, with some fine clouds, but the water is just a little too patchy, and the print covered with innumerable cracks all over, due to careless drying.

GRIFFITHS, EVAN (St. Columb).—"A Quiet Retreat:" a well composed and pleasing picture, but which is printed (silver) a little too deep, and requires some light in the right-hand corner. We shall expect to hear of this competitor again shortly in our front rank if this is a specimen of his average work. Taken on an Ilford whole-plate, with Dallmeyer's landscape lens, with 4 sec. exposure, in October, 10 a.m., with sun behind fog.

GURRIN, J. M. (Isle of Wight).—"Entrance to Shanklin:" rather a flat, over-exposed negative, on Thomas's E. R., exposed in July, at 3 p.m., for 3 sec., in strong, diffused light, with Optimus 5 by 4 R.R.,  $f/32$ , and printed on pink albumenised paper, which does not increase the artistic properties.

HEPWORTH, N. (Eccles).—"Snow Scene:" a half-plate bromide print, with intensely black shadows, void of detail and detailless snow, from an exposure of 2 min., on 7th ult., in very dull light, with Wray's R. R.,  $f/64$ . We should advise this competitor to expose his bromide paper longer, and use eiko-



No. 4.]

"WATERING THE HORSES."

[Geo. Baxter.

12 in. focus, about  $\frac{1}{2}$  sec.,  $f/22$ , in May. This print is reproduced, No. 4, and if the fog had been absent at the sides, and there had been a little less foreground, it would have taken a prize.

FOX, E. (Basingstoke).—"The Vyne." This is a quarter-plate view, taken with single lens with  $f/11$ , 1 sec. exposure, in April, at 5.30 p.m., on a very dull, cloudy day, on Ilford plate. The competitor states that it was "spotting with rain, and he was in a great hurry, being about three miles from home." The print has no principal object of interest, has too much foreground, and is flat and weak.

GOODWIN, ALF. (London).—"After the Storm:" a half-plate print taken with Taylor's R.R., working at  $f/32$ , 3 sec. exposure, on dull day at noon in December, on Castle plate. It is a good representation of the effects of a fearful gale, a tree broken off and torn up by roots lying across the grass.

GREAVES, A. K. (Harlingham).—"A Wimbledon Lane:" taken on an Ilford quarter-plate, with Lancaster's Instanto working at  $f/10$ , with 3 sec. exposure at 8.30 a.m., in good light



nogen for development, so as to get rather less contrasted chalky prints.

HELLON, W. BURTON (Aintree).—"Gateway, Conway Castle." "This view was taken during a shower of rain on a very dull day, and the space for taking the view is very cramped and limited, making it a difficult task." Technically, a good print, but would be improved by the omission of the figure, and by painting on the back of the negative the whole of the view seen through the arch, which is now too bright and close to the observer to be artistic. Taken with Optimus Euryscope,  $f/22$ , 5 sec. exposure, 1 p.m., in August, on Ilford ordinary.

HORSBURGH, E. M. (Edinboro').—"Lundy Mill." This competitor scores well by a judicious but vigorous use of the knife. The print is only 5 by 3 in., and we think cut down from a whole-plate. It is brilliant with sunshine, but a little too black in the foreground; and we should like to see suitable clouds and a matt-surface. An Ilford ordinary plate was exposed by the aid of Ross' R. S. 8 by 5, in October, at 2.30.

WOODS, GEO. (Hastings).—"Willing Employment Makes Labour Light." Taken on Thomas' T. C. E. R. whole-plate, with 11 in. Dallmeyer R. R.,  $f/15$ , quick shutter, noon, in September. A little too hard and chalky, but decidedly pleasing. Reproduced, No. 5.

HORTON, J. W. (Lincoln).—"Monk's Lane." This was taken the wrong way of the plate; far more pleasing results could have been obtained too had the camera been placed a little further up the lane to catch the bend more. Laverne's R. S.  $f/32$ , 3 sec., July, 11 a.m., in very good light.

HICKS, THOMAS (Aldershot).—"The End of the Weir." An Ilford quarter-plate ordinary was exposed for  $\frac{1}{2}$  sec. with Lancaster's Combination Rectigraph, at  $f/16$ , in very strong light, at noon in September. Had the plate been turned the other way, and the four figures been absent from the brickwork, it might have been possible to have made a picture.

HUTCHINSON, ALF. (Louth).—"Cawthorpe Springs:" technically a good print, and would have been much improved by a figure suitably placed, and an inch less foreground. Taken on a "Castle" plate, with single lens,  $f/11$ , 3 sec. exposure, in good light, at 11 a.m. in March.

HUGHSON, A. (Mollington).—"Hoar Frost." This competitor is to be congratulated on having sent us a very good half-plate study of hoar frost, but the centre of the picture is artistically very weak. R.R. lens,  $f/16$ , 4 sec., December. Diffused light, 11.30 a.m. Ilford ordinary.

HININGS, W. H. (Pudsey).—"Hough Side:" an artistic print, artistically framed, which came near winning a prize. Ilford ordinary half-plate, Reynolds and Branson R.R.,  $f/16$ , 30 sec., December, very dull and foggy, 2.15 p.m.

HOLMES, HENRY (Derby).—"In Eccleston Village:" a flat, over-exposed bromide print of a not very artistic subject, taken on an Ilford White Label, with 1 sec. exposure, at 2 p.m., in September, sun shining, with Taylor, Taylor, and Hobson 8 by 5 R.R.,  $f/22$ .

HINDE, CHAS. H. (Southport).—"Church Walk, Woodhall:" a nice little quarter-plate bit, with a good play of light and shade. Mawson's "Castle" plate, Ross R.S.,  $f/11$ , 2 sec. May, 11 a.m., "sunlight through trees."

HAMER, A. (Stockport).—"Adlington Hall." This half-plate bromide print represents the hall in the middle of the plate, with nearly straight converging lines of trees on each side, a huge expanse of water, which reflects the same, and makes the whole look like a big X laid on its side. One of the principles of art is that the principal object should not be in the centre of the picture. An Ilford ordinary was used with Lancaster's Rapid Rectigraph,  $f/32$ , and exposed for 8 sec., at 4 p.m., in bright light, without sun, in the middle of August.

HARDMAN, MISS F. A. (Reigate).—"A Surrey Home." This competitor can, we know, turn out better work: the print is flat and poor. Ilford whole-plate ordinary was exposed with Optimus R.R.,  $f/20$ , for 2 sec. at noon on a dull day in December, but it is evident, from the shadows, there was sun.



No 5.]

"WILLING EMPLOYMENT MAKES LABOUR LIGHT."

[Geo. Woods.

HARRIMAN, J. (Henley).—"In the Gloaming." There is no reason why this should not have been taken the other way of the plate, which would, we think, have given a better picture; it came in the first rank, and was much commended by the judges. A Mawson plate was exposed at 6 p.m. in fairly good light, for 2 sec., with R.R. working at  $f/15$ . The print is a hot-bath platinotype, and, technically, very good.

HANNAH, H. (Liverpool).—"Copley Lake." a fearfully flat, inartistic print, which is from an Ilford ordinary quarter-plate, exposed for 5 sec., with Lancaster's single lens,  $f/22$ , at 5 p.m., about the middle of July, with sun shining from behind the camera.

JOHNSON, I. C. (Gravesend).—"A 12 by 10 silver print of a view in Gravesend, which was taken on a Wratten and Wainwright ordinary three-years-old, Ross doublet, 4 sec. exposure in good light, at 10 a.m. At least 2 in. too much foreground and printed in the sun, which has not improved the quality of the result.



HUNT, Miss C. (Reading).—"A Cottage Home:" a simple little pastoral, a little too deeply printed and with too much foreground, but peaceful, quiet, and pleasing. A beginner in photography six months when view was taken. Thomas' T. C. L. quarter-plate, Lancaster's single,  $f/20$ , June 9th, 3 p.m., sunlight, 5 sec. exposure, and consequently slightly over-exposed. We shall get some good work yet from this hand.

IVE, E. V. (Henley).—"Remenham Church:" taken from a very bad point of view, and print over-toned, flat, and poor. Single lens,  $f/16$ ,  $\frac{1}{2}$  sec., Jan. 7th, 1892, sunshine, noon; Castle plate, silver paper, borax toned.

JENKINS, GEORGE W. (Croydon).—"Beddington Church:" technically a good print, which would have been improved by slewing the camera round so as to cut out some of the fence and trees on the right. Thomas' E. R., Burr's 7 by 5 doublet,  $f/32$ ,  $2\frac{1}{2}$  sec., Easter Monday, 1891, in weak sunlight, at 2.35 p.m.

JAMIESON, A. (Lanark).—"In Cleghorn Woods:" a fine bit of winter woodland with atmospheric effect, spoilt by a prominent figure. Paget xxx., R. R. lens,  $f/22$ , 5 sec., Jan. 1st ult., mid-day in sunshine.

WADLING, LT.-COL. (Toward Point).—"Soop 'em up, Sandy!" "A sudden break in the fog enabled me to take a snap shot just as the winning stone was on its way, but apparently not travelling with sufficient energy. There was the usual cry of 'Soop 'em up—soop 'em up!' so well known to every curler." This is one of the rare chance snap shots which form a pleasing little picture. Taken with Taylor's lens,  $f/11$ , snap exposure on 16th ult., at 1.20 p.m., fog overhead just clearing away, on a German "nameless" plate. This print speaks well for plate and operator.

JESSOP, MRS. E. (In-stow).—"Chope's Bridge:"

the best bromide print in the competition, brilliant with sunshine, good gradation and detail, and only wanted the distance a little less sharp; taken on Marion's White Label half-plate with Rouch's French R. R.,  $f/44$ , 3 sec. exposure in September at 3.30 p.m. in good light. "I have never exhibited before, and am quite self-taught," and we congratulate this competitor on the result, and we shall hope to see more work equally good and even better.

JUMEAUX, B. (Brighton).—"On the Stock:" a pretty little quarter-plate bit, taken on an Edwards' Isochromatic with R. R. lens,  $f/22$ ,  $1\frac{1}{2}$  sec. exposure in sunshine in February. The print is hardly brilliant enough.

JARDINE, GEO. C. (Stamford Hill).—"A Dorsetshire Lane." 7-8ths of an inch off the foreground of this print would have made it artistic. Technically it leaves nothing to be desired. "The day had been very dull, with occasional showers, but it was just beginning to brighten up, although the sky was still heavy. The negative, a very soft one, was developed with eikonogen," and was on a Paget xxx., exposed for 4 sec. at 5 p.m., the first week in September; Optimus R. R., working at  $f/16$ ; Scholzig's matt-surface paper, uranium toned.

KIRKLAND, W. H. (Nottingham).—"A Corner of the Garden," with a fair daughter of Eve as the object of interest; a very

pleasing enlargement, which has only one fault, and that is 2 in. too much of out-of-focus foreground. The negative was on Ilford ordinary, exposed for 2 sec. at 5.30 p.m. in July in good light with Morley whole-plate R. R.,  $f/16$ . "Enlarged in daylight, camera of own make, developed with hydrokinone."

KENDON, S. (Goudhurst).—"Chesham:" an exceptionally good bromide print of a good topographical view of the town, taken with French R. R.,  $f/32$ ; 3 sec. exposure in August in sunshine, at 10.30 a.m., on Ilford ordinary.

KINGSFORD, R. L. (Cambridge).—"Grasmere Church, where Wordsworth and Coleridge are buried, and a stone erected to Arthur Clough:" a very good print, which would have been better if not printed in the sun. Taken on an Ilford ordinary half-plate, with single lens working at  $f/22$ , in 1 sec. in middle of July, at 11 a.m., in bright diffused light.

LANE, THOS. S. (Birmingham).—"Caesar's Tower, Warwick Castle:" not taken from the best point of view, with R. Rectigraph lens,  $f/20$ , in 2 sec., in August; diffused light at midday on Ilford ordinary. The camera was not level, and the print wants trimming at the bottom.

LORD, GEO. (Salford).—"Where Path and Stream Entwine:"

an over-printed, carelessly mounted print, from a pleasing quarter-plate negative on Ilford ordinary; exposed with Lancaster's Instanto,  $f/16$ , 3 sec., mid-June, bright sunshine, 4.30 p.m. "Certainly makes a better picture on paper than it looks in reality," and would be still improved by a little more attention to details in the manipulations of printing, and the use of a matt paper. Artistically a figure or a little life would have improved it.

LISLE, T. A. (Wolverhampton).—"Llangollen:" a topographical picture of a charming spot. Far too much has been attempted. Lancaster's Instantograph,  $f/30$ ;

1 sec., August; bright sunlight, 4 p.m.; Mawson's Castle plate.

LISLE, T. (Wolverhampton).—"The Canal, Tettenhall." Seven children standing in a row on the banks of a canal in a fog do not make a picture. The print is carelessly mounted and trimmed. Taken on a Paget Phoenix quarter-plate with Optimus R. R.,  $f/16$ ;  $1\frac{1}{2}$  sec. exposure in diffused light in June, at 5 p.m.

LINGTON, Miss C. R. (Liverpool).—"A Steward's Lodge in Connemara." "There was a slight breeze at the time, and as I had not my shutter with me the result is obvious in the trees on the right and grasses." The slight movement is not displeasing, only there is just one bit of the tree which might and should have been painted right out, and had clouds been printed in so as to form an opposing line to the contour of the hills, a prize might have been gained. Taken on an Ilford ordinary with Dallmeyer's R. R.,  $f/15$ , with 3 to 4 sec. (far too long, really), between 11 and 12 a.m., in bright sun in September. The print, a hot-bath platinotype, shows good mastery of the process.

MEDEN, E. V. D. (W. Norwood).—"A Bit of Chesham:" far too deep a print of a subject which would be improved by suitable clouds. Taken on a Wratten ordinary at the end of August, at 3.30 p.m., in strong sunlight, with Optimus 7 by 5,



No. 6.]

"SOOP 'EM UP SANDY!"

[Lt.-Col. Wadling.



R.R.,  $f/64$ , and 15 sec. exposure. Had a larger aperture been used, more atmosphere and distance would have been obtained.

MORRIS, W. G. (Macclesfield).—"A Quiet Evening." This is a very good example of the misuse of a figure. Seated right in the centre of the picture is a figure utterly out of keeping with the character of the scene. Had an inch been cut off the foreground, and the figure of a rustic going home, with fork and bag, or some simple implement hung over his shoulder, and a suitable evening sky printed in, it would have made a perfect picture. "The negative of this print has been developed with pyro-ammonia; having had only three months' experience." Technically the work is good, though the print is somewhat over-toned; taken on Ilford ordinary half plate, at 6.30 p.m. in July, in dull light, with Lancaster's Instanto,  $f/20$ , and  $4\frac{1}{2}$  sec.

MORSHEAD, J. T. (Canborne).—"The Trysting Stile." "a three months' worker only." We have here again the same misuse of a figure of a nice-looking young gentleman, no doubt, in hard felt hat, "spotlessly white cuffs and collar, and green silk umbrella," but utterly out of place here. The stile plays quite a secondary part, and there is no sharp focus, and the print is over-toned. Taken on Ilford ordinary at 4 p.m., in dull light in August, 2 sec., R.R.  $f/16$ .

MORTEN, F. (Surbiton).—"An Old Cottage." "A very windy day, with sudden gleams of sunshine. Negative developed with pyro and ammonia, H. P. Robinson's formula." This competitor has been exceptionally fortunate in catching "a sudden gleam," and the print is good technically, but would be improved by half an inch off foreground and left side. Wratten Instantaneous half-plate, taken at mid-day in October, with 5 sec. exposure, with Grubb's R.R.,  $f/16$ .

MASSE, H. J. L. T. (Ealing).—"Christchurch Priory." a half-plate print, which requires three-quarters of an inch off the left, one and a half inch off the foreground, and three-quarters of an inch off the right, and the negative wants intensifying or else printing under green glass. Taken on Thomas E.R., with Lancaster's new Instanto,  $f/22$ , 1 sec., at 11 a.m. in August.

NICHOLSON, A. (Leeds).—"View at Meanwood." what is meant for a snow scene, but is all white paper against a whiter sky. Taken on Barnet plate, 3 p.m., in diffused light, on 9th ult. with 2 sec. exposure, Optimus R.R.,  $f/32$ .

SHERWOOD, T. H. (Macclesfield).—"Bosley Cloud." "Taken within the first month of purchasing my apparatus," and we can congratulate the competitor on his result. Artistically it required a little more sharp foreground and less sharpness in the distance, and the camera should have been at least one foot lower down. Taken on Thomas' Pall Mall, with Wray's landscape lens, working at  $f/8$ , with about 1 sec. exposure (probably far too long), about 11 a.m. in August, when cloudy.

RUDGE, A. H. (Tettenhall).—"The Shadows of Departing Day creep on once more." Certainly a very pleasing print; there is a little too much foreground, and not sufficient care has been taken, in printing, in the clouds, to mask the landscape. It came very close to the prize pictures. Taken on a "Castle" plate, at 4 p.m., in fair light, in December, with 6 sec. exposure, and Lancaster's Instanto, working at  $f/32$ .

RAMSAY, GEO. W. (Richmond).—"In South Devon." "one of some reminiscences of a drive in South Devon. I felt regret that I could not introduce some suitable figures, but I was pressed for time, and the figures were not there; I expect it is a much photographed spot, as I have seen the same view in several friends' albums." Quite so, Mr. Ramsay, and you lost a prize for want of the figures. Technically the print is very good ( $7\frac{1}{2}$  by  $5\frac{1}{2}$ ). Taken on Ilford ordinary, at 4.30 p.m., in October, with Optimus R.R., at  $f/11$ .

TURNER, A. (Nunhead).—"A Shady Corner." "The print is from one-half of a stereo negative, and home-made apparatus; owing to the heat, number of insects, etc., the cattle were in an exceedingly restless condition." By no means a bad little study, but a shorter exposure would have been permissible and

would have improved it. Taken on Ilford ordinary, 1 p.m., July, sunny,  $\frac{1}{2}$  sec.,  $4\frac{1}{2}$  in. Lerebours stereo lens working at  $f/8$ .

SMITH, B. A. (Birmingham).—"Llangollen Canal." a very pleasing view marred by some hideous whitewashed posts right in the foreground. Taken on Ilford ordinary at 2.30 p.m., in bright diffused light in September, 4 sec. exposure with Optimus R.R.,  $f/24$ .

SMITH, J., JUN. (Liverpool).—"Sunset on Lake Windermere." "This was taken from Bo'ness pier after arriving from Ambleside by steam yacht. Bo'ness is about three miles from Windermere. Something not generally known to Liverpool friends or anyone else is a trip to Windermere every Monday during the summer for 3s. 6d. return, per L. and N.W.R., which is a boon; the distance is, return, 160 miles." Taken on an Edwards' Instantaneous at 8 p.m., in July, 1-25th sec., French R.R.,  $f/8$ . A very fine evening effect.

STORY, G. A. (Canterbury).—"The Grey Friars." a very pleasing little bromide print. Taken on Thomas' E.R., in very bright sunshine at noon in August. Swift's 5 by 4 Rapid Paragon,  $f/16$ , and  $\frac{1}{4}$  sec.

RADFORD, H. (Nottingham).—"Hoar Frost Study." from Kodak picture taken on Christmas Day at 1 p.m., with 4 sec. exposure in dull light. The print is a little too black, and is stained here and there; a rather more greyish picture would give a far more pleasing result.

BENTLEY, H. C. (Louth).—"Misty Winter Morn." a very good snow hoar-frost scene, taken with R.R. lens, with 4 sec. exposure on Christmas Day, in dull and foggy light, at 11.30 a.m., on Castle half-plate.

BRYANT, M. S. (St. John's).—"Shanklin Chine." Every amateur who goes to the Isle of Wight tries to make a picture of this spot, and few succeed, and this print is not above the average. Taken with single lens, with 12 sec. exposure at noon on a day. Technically a good print, and shows fair work for a competitor only 14 years old.

BUTTFANT, GEO. (Islington).—"Bonchurch." and not from the most pleasing point of view, and far too much foreground. Technically a good print, taken with Grubb's 15 in. landscape lens,  $f/30$ , 2 sec., in July, at 6 p.m. in bright light.

CUNNINGHAM, J. A. (Greenock).—"In Glen Sannox." a very fine whole-plate print of a charming spot, but it would have been much improved by a little less printing and a matt surface. Taken with half-plate R.R.,  $f/36$ ,  $2\frac{1}{2}$  sec. in July at 3 p.m. in sunshine.

FIRTH, G. T. (Wakefield).—"The Haunt of the Fairies." a very fine half-plate print, toned rather too much, and should have had the foreground sharp. Taken with Wray's R.R.,  $f/16$ , 5 sec., in good light at 2 p.m. in September, on Ilford ordinary.

JOY, R. C. (Ormskirk).—"Aber Valley." taken about 100 yards from Aber bridge, looking towards the lake, with Shew's Eclipse hand-camera with 5 in. focus lens, working at  $f/20$ , in 4 sec., in good diffused light at noon in August, on Castle ordinary. This is technically very fine, but a rustic figure or two on the little foot-bridge would have made the picture.

JACKSON, J. H. (Stockon-on-Tees).—"A Rest by the Way." The lens used was one of a pair of stereos bought from Grubb some twenty years since. The day bright, but a yellow haze: the party resting after a stiff pull uphill. A very good print-out platinum print, but far more artistic without "the party." Taken with Grubbs' single aplanatic 6 in.,  $f/16$ , in 2 sec., in July, at 5 p.m., on Ilford 5 by 4 ordinary.

MACMILLAN, M. (Rothsay).—"Ardenraig Cottage." taken with Lancaster whole-plate view lens,  $f/24$ , with 5 sec. exposure, third week in September, in sunshine, at 1.15 p.m., on Ilford ordinary. "A very windy day; the effect will be seen in upper right-hand corner, which should be clear sky." The print is hard and chalky, and is completely spoilt by halation, fuzzy foreground, pink paper, and wind. Could only be taken in a diffused light on a still day.



McNAIR, Miss F. E. (Skelmorlie).—"Newby Bridge," a half-plate print spoilt by printing in the sun and the introduction of an unsuitable figure. Taken on an Edwards' rapid with Lancaster's single lens, 2 sec., in August, at 5 p.m., in strong light.

MASON, Ed. (Askvigg).—"In the Deanery Grounds." "The beautiful effect of light and shade attracted my attention whilst walking in the Deanery grounds, York, and the print is a fair representation of the scene. The chapter-house occupies the middle distance." Rather lighter printing would, we think, improve it. Taken with Lancaster's R.R.,  $f/22$ , in  $\frac{1}{2}$  sec., in May, in strong sunlight, at 1 p.m., on Ilford ordinary.

MASON, WM. (Rotherham).—"Cottage on the Common." This half-plate print is spoilt by too much foreground, by too much on the left-hand side, and a flare spot. Taken with Newton's R.R.,  $f/40$ , 10 sec., at 5 p.m., on a dull day in August, on Barnet ordinary.

MACLEOD, R. E. (Hayward's Heath).—"In the Woods at Dunvegan." A very good study of trees, which might be improved by an inch less foreground, and the figure of an old man or woman bearing on the back a bundle of sticks. Taken with Beck R.R.,  $f/45$ , 90 sec., in good light, at 2 p.m., in November on Wratten ordinary.

MAITLAND, VISCOUNT (Lauder).—"On Sentry, Camp, 93rd Highlanders." Certainly not equal to any work we have ever seen from this competitor. Two inches might well be spared from the foreground and an inch from the sky, and the focus was not good at all. Taken with 10 by 8 R.R.,  $f/16$ , 2 sec., in dull light, in June, on Carbutt's negative film.

MALLET, M. E. (London).—"Entrance to Sychnant Pass." This print is well composed, but a little sharper focus in the foreground and less in the distance would have improved it, and the road is too white. Taken on an Eastman's film, with Taylor's 9 in. R. view lens,  $f/22$ ,  $\frac{1}{2}$  sec., in strong sun, at 4 p.m., in September.

MASON, J. L. (Louth).—"Hubbard's Hills:" rather a flat print, with composition a little too formal. Taken on Castle plate with single lens,  $f/11$ , 6 sec., on cloudy April day, at 10 a.m.

MALPAS, R. (Reading).—"In a Berkshire Village." The competitor says, "I have not printed in any clouds, as the sky was quite clear at the time of exposure, being one of the few nice Saturday afternoons with which we were favoured last year, which was my first season." Notwithstanding this statement, we venture to suggest that art could here improve nature, and it was a serious fault to cut off a bit of the cottage. Taken on Thomas's E. R., with Lancaster's Instanto, 1 sec. exposure, in bright sunshine, at 3 p.m. in July.

MARSHALL, J. (Pudsey).—"Park Spring, Hugh Valley." "The day was rather dull," but we should say the bromide print represents night almost, and is dirty and stained. Taken on Ilford ordinary, with French R.R.,  $f/15$ , 4 sec., in November, at 1.45 p.m.

MATTHEWS, J. R. (Carlisle).—"Evening:" a carelessly trimmed and mounted quarter-plate, giving no idea of evening. Taken in 3 sec., on Marion's ordinary, on a cloudy day, at 6.15 p.m., in August, with Lancaster's Merveilleux. Sharper focusing would have improved this.

MOORE, WM. (Lincoln).—"A Shady Lane:" a foggy half-plate, printed with 1 in. too much foreground. Taken on Ilford ordinary, at 6.45 p.m., with Instantograph,  $f/20$ , 2 sec., in July.

MURRAY, E. E. (Lower Clapton).—"Near Roydon, Essex:" a quarter-plate view, taken with Crouch's Presto hand-camera, with single lens, working at  $f/11$ , with 3 sec. exposure, at 9 a.m., in September, between two showers of rain. The print on Obernetter paper is spoilt by printing in the sun and over-toning, and 1 in. less foreground would improve it artistically.

MYERS, ELLIS (Keighley).—"Winter, Hoar Frost:" "Taken on Christmas Day, in bright light, but slight fog." A very fine

study, taken on Ilford half-plate ordinary, with Optimus Euryscope,  $f/32$ , 30 sec., at 3 p.m.

NAUNT, Miss E. M. S. (Chester).—"Hoar Frost:" a blue-black bromide print, which was not sufficiently exposed, consequently we have white paper and not hoar frost. The negative was taken with Taylor, Taylor, and Hobson's lens,  $f/16$ , 4 sec., at 11 a.m., in December, on "Castle" plate.

NEWETT, A. C. (Fleetwood).—"View on the Dargle." "Taken from a rock in the middle of the stream with great difficulty." This is rather under-exposed, and taken wrong way of plate. Ilford ordinary half-plate, Taylor lens,  $f/16$ , in bright light, in August, 3 p.m.

NIBLET, Miss F. (Ledbury).—"Cottage by a Fish Pond:" a half-plate print, completely spoilt by halation and over-toning. Taken on an Ilford ordinary with Atkinson's R.R.,  $f/11$ , about 4 p.m. in September, and 3 sec. exposure.

NICHOL, A. C. (Chorlton Kings).—"On the Chelt:" a whole-plate bromide print, representing a very fine "hoar frost," taken with Taylor, Taylor, and Hobson's Mid-angle,  $f/32$ , 10 sec. exposure, on Christmas Day, in diffused light at 11 a.m. Paget Phoenix plate.

NICOL, E. (Perth).—"When Woods are Green." The light, although good, was prevented from reaching the parts in the shade of the trees, hence the rather long exposure to get detail in the shade. Taken with Lancaster's half-plate Instanto,  $f/32$ ,  $12\frac{1}{2}$  sec., at 3 p.m., in sunlight in July. Paget xxxxx plate; a good study of trees, and light and shade.

OGLIVIE, A. M. (Glasgow).—"Thro' the Wood." The plate was exposed in a Shew's 5 by 4 hand-camera supported on a tripod. Taylor, Taylor, and Hobson's 6 in.,  $f/32$ , 30 sec., in dull light, at 3 p.m. in September; Wratten's instantaneous, Blanchard's platinum process. A very charming little peep, technically perfect, but wanting in some life to give interest.

OLIVER, G. F. (St. John's Wood).—"We do not know whether this competitor intends to be sarcastic, but he says, 'The cottage in which Milton composed 'Paradise Regained' after losing his wife.' A much over exposed half-plate print which should have included a little more of the cottage; taken on an Ilford with R. R.,  $f/22$ , in  $1\frac{1}{2}$  sec., in bright sunshine, about 12 noon in July.

PARKER, JOHN (Hereford).—"Dunster Market House." "This subject, about two miles from Minehead, is one which has been overdone by amateurs. The village is interesting, and in bad weather the interiors of the church and 'Luttrell Arms' are worth a dozen plates." A very good print technically, obtained by printing through green glass, but we should have cut off the fuzzy youngsters entirely. Taken on Thomas' E. R., at 11.30, in good light, in May, 4 sec. exposure, Dallmeyer's whole-plate, working at  $f/32$ .

PARTRIDGE, F. (Launceston).—"Altarnun Bridge:" or, we should say a bit of it. It is fearfully under-exposed, and too much pyro has been used, consequently the high lights are chalky. Taken on a half-plate, Ilford ordinary, with Lancaster's Rectigraph,  $f/20$ , 4 sec., in September sunlight, at 4.30 p.m.

PEARCE, W. B. (Wednesbury).—"On the Borders of the Black Country." "The negative was taken five weeks after commencing photography; the camera is my own make, and the lens purchased through the AMATEUR PHOTOGRAPHER Sale and Exchange." Either this was not sharply focussed, or else, what is extremely likely, the ground-glass is not in exact register with the dark-slide. Taken on an Ilford ordinary in diffused sunlight, at 3 p.m., in September, with R.R.,  $f/32$ , and given a far too long exposure of 3 sec.

PERIGO, E. (Oldham).—"The Lake, Hesketh Park:" a half-plate print of good technical quality, but without the slightest artistic merit. Taken with Underwood's Instanto,  $f/22$ , 2 sec., at 6 p.m., in sunlight, in July, on Thomas' T.C.L.

POTTER, J. G. (Worthing).—"By the Wayside:" a missed chance. Given a couple of old gossips at an old-fashioned wel-



and a good country wayside cottage, a picture might have been made; as it is now, it is anything but artistic. Taken on Barnet ordinary, at 2 p.m., on dull, cloudy day in November, with 3 sec. exposure, Taylor's 3 D.,  $f/16$ .

POWELL, T. A. (London).—"Rigg Mill, Whitby:" by no means a good print of a charming spot; suffers very much from halation, and was taken on a slow Ilford half-plate with rapid Euryscope,  $f/11$ , and 5 sec. exposure, at 4 p.m., in August, in sunlight.

PRITCHARD, T. D. (Blackheath).—"Pinner Green:" technically a very good print, but rather wanting in artistic merit. Taken with Lancaster's single lens,  $f/16$ , 1 sec., at 4 p.m., in July, in sunshine, on a Paget Phoenix plate.

REDFERN, H. J. (London).—"In the Dukeries:" taken on an Ilford 5 by 4 ordinary, with Watson's R.R., at 5 p.m., in July, with  $f/16$ , and 5 sec. exposure. A very good platinotype print, but the foreground should have been a little sharper, and the distance a little less sharp; now the distance is too close up.

REDWOOD, T. H. (Chingford).—"Cottage at Llantwit Major." Far too hard and chalky. This negative would well repay for doctoring. Taken on a Carbutt Isochromatic film, with Voightlander's new single lens,  $f/22$ , 5 sec. exposure, at 11 a.m., in sunlight, in July.

RENDELL, H. (S. Molton).—"Stag's Head, Filleigh." Spoilt by an utterly incongruous figure. Taken on an Edwards' Isochromatic plate, with Wray's  $5\frac{1}{2}$  R.R.,  $f/16$ ,  $\frac{1}{2}$  sec., at noon, in sunshine, in September.

RHODES, STUART (Canterbury).—"The Norman Staircase, Canterbury." "I have only had a few months' experience," therefore we must not be hard; still, there is a want of sharpness about this, and the camera was not upright, and the plate was rather over-exposed. Taken on an Ilford ordinary, at 7 a.m., on a very clear July morning, with  $2\frac{1}{2}$  sec. exposure, and Lancaster's Rectigraph,  $f/20$ .

RICE, WM. (London).—"In Arundel Meadows." "The view represents the commencement of the hay season, and was taken at the first stroke of the scythe. Arundel Castle is seen in the distance." A very good platinotype print, but which would, we think, have been better if there had not been so much repetition of the lines bent towards the right hand of the picture. Even the rake leaning the other way would have helped it. Taken on a backed Edwards' portrait plate, with Ross 6 by 5 R. Sym.,  $f/22$ ,  $\frac{1}{2}$  sec. exposure with Thornton-Pickard foreground shutter, in brilliant diffused light, at 11 a.m., in May.

RICHARDSON, JOHN (Canning Town).—"The Pump, Southminster." "This was taken during my first outing with a camera." The composition is a little too formal and too straight, and the pink paper is hideous, but it speaks well for the careful work of such a young beginner. Taken with Lancaster's Instanto,  $f/20$ , 1 sec. exposure, at 11 a.m., in sunshine, in July, on Ilford ordinary.

RICHARDSON, MRS. J. J. (Nottingham).—"Loch-an-Eilan:" printed too deep and toned too far. Taken on Ilford ordinary, with Dallmeyer's triple achromatic,  $f/32$ , 4 sec., in strong diffused light, at 3 p.m., in September. By no means such artistic or technically good work as this competitor can do.

RICARDO, MAJOR F. C. (London).—"At Buttermere." "The bridge by Victoria Hotel, Buttermere, whither I went by coach from Keswick. The hall in the distance is Buttermere House; the haze on this mountain caused great density on the negative, which requires masking of remainder in printing." Taken with Optimus R.R.,  $f/22$ ;  $2\frac{1}{2}$  sec., in bright sunlight, at 2 p.m., on Britannia ordinary. The focussing has been too fine, and the print is, therefore, somewhat flattened.

RILEY, JOHN (Haslingden).—"Avenue of Limes." "I had great difficulty in making the exposure, as it was very windy at the time. I took the cap off and put it on several times when the wind was blowing." The print suffers fearfully from halation, and the composition is as stiff and as formal as we have

ever seen. Taken on Thomas's E.R., at 5 p.m., in good diffused light in July; exposure, 2 min., Optimus R.R.,  $f/32$ .

ROBERTSHAW, J. (Hebden Bridge).—"Howden Hall:" taken on an Ilford ordinary half-plate, with R.R.,  $f/22$ ; 2 sec., at 11.30 a.m., in June, in diffused light. A good print technically, but has too much foreground and wants life.

ROSCOM, J. S. (Bolton).—"Cottage, near Bolton:" taken on Castle plate, at 3 p.m., on 10th ult., with 4 sec. exposure, R.R.,  $f/16$ . The competitor states: "I exposed the plate on January 10th, and was sorry to find the snow had fallen from the trees, as I think I should have had a much nicer picture." We differ, however, from this opinion; the print on Ilford P.O.P. has a very brilliant glaze, and represents the snow as absolutely white spotless paper. If any proof is required of the possibility of obtaining pure whites utterly devoid of any detail whatever on gelatino-chloride paper, this print is sufficient.

ROUT, S. (East Finchley).—"Chingford Old Church:" taken on an Ilford ordinary, about noon, in good light in August, with Optimus R.R.,  $f/22$ , and 3 sec. exposure. "The sun was shining brightly, and I had to wait an hour and a half for a cloud to obscure the sun. Printed under green glass, taking nine days to print;" and we are sorry the print suffers from halation, and the tail-end of the church was cut off.

RUSSELL, F. T. (King's Lynn).—"The Avenue, Lynn." "I am an amateur of two and a half months only, and never entered a competition before." Taken on an Ilford ordinary with Instantograph,  $f/30$ ,  $\frac{1}{2}$  sec. on a dull day in November, at noon. The subject should have been taken the other way of the plate, which is rather under-exposed, and the print is printed too deep.

SANDERSON, F. H. (Cambridge).—"A Peep at King's." "The view is taken from King's College back gates; the stranger (who spoils the whole thing) has just stepped inside to gain a better view of the grand old chapel, which, however, I have failed to render as I would wish, owing to Sol covering his face with his hands before I could expose." Taken on Ilford slow, at 12.30, in very soft sunlight last month; 20 sec. exposure, 8 in. Suter landscape, working at  $f/32$ .

SAVAGE, G. A. (Folkestone).—"A Rest by the Roadside." "This is an old house at Newington called 'Frog Holt,' and is about three miles from Folkestone; it is now in a very tumble-down condition, and I am told is about 400 years old." This has a very curious sky, which looks to us put in, and does not add to the artistic qualities of a not very good treatment of a good subject. Taken on an Ilford ordinary with the front lens of a quarter-plate Shepherd,  $f/16$ , 3 sec. at 6 p.m. in June in sunshine.

SAWERS, W. W. (Glasgow).—"Bute Woods;" technically one of the best of the many good tree studies in this competition, but wanting in figures to give it artistic merits. Taken with Dallmeyer's 6 by 5,  $f/50$ , 20 sec. exposure at 2 p.m. in dull light in August, on Ilford rapid.

SCOTT, A. (Stratford).—"Fairmead, Epping Forest." Less foreground and less sharpness in the distance would have made this a pleasing picture. Taken with Lancaster's Instanto lens,  $f/20$ , in 2 sec., at 3 p.m. in sunlight in April, on Ilford plate.

SEALEY, H. H. (Bath).—"The Ford at Knook." "This was taken on a bright day in December at noon. The coal cart was standing near the ford as I came up with the intention of taking it, but the owner got out of sight and the woman buying coal retired behind the cart," and thus spoilt a good whole-plate picture. Taken on an Ilford ordinary with R. R. in  $1\frac{1}{2}$  sec.

SEGWICK, JOSEPH (London).—"Open the Gate." "I was about to expose a plate in another direction when I heard a child remark, 'I will open the gate,' and it struck me as I looked round it would make a good picture, so I asked them not to move." Taken the other way of the plate, and making the boy leading the horse put his hand on the gate and look at the urchin would, we think, have improved it; even now an inch off the left side would improve a good picture.



SEWELL, W. (Barrow-in-Furness).—"A Woodland Scene:" a very pleasing matt-surface Kallotype print, but the boy is not an addition to the artistic qualities. Taken on an Ilford ordinary with 7 by 5 Optimus R.R., about 11 sec. exposure, 1 p.m. in bright sunshine the beginning of May.

SHAND, W. R. W. (Chester).—"A Quiet Pool." "This is a pool in the Liddel, Dumfriesshire, at the foot of some very pretty falls, which, unfortunately, cannot be photographed, owing to some large rocks being in the way." A very nice spot, well taken and well composed, but a figure on the left would, we think, have improved it. Taken on a Castle plate at 1.30 p.m. in the sun in October with  $3\frac{1}{2}$  sec. Taylor, Taylor, and Hobson's R.R.,  $f/22$ .

SLATER, J. Y. (Wakefield).—"Scene in Haw Park:" taken on a Thomas' E. R. quarter-plate with Lancaster's single lens working at  $f/32$ , 4 sec. exposure, weak sunlight at 2 p.m. in August. There is too much foreground or water here.

SMALLRIDGE, C. (Ivybridge).—"A Devonshire Village—Kingston." "It was 5 p.m. when I passed through this quaint old village, which has a wealth of beauty in thatched cottages. The father had just finished his day's work, leaving his cart by the shed, and his two children have just met him. I thought this would make a picture, and I set to work and secured it;" and so it would had the intrusive children on the left been omitted, and the father and bairns not been staring into the camera, and the sky wants some good clouds in. Taken with Optimus Euryscope,  $f/11$ , with  $1\frac{1}{2}$  sec. in diffused light in July.

SMITH, H. S. (Bradford).—"Fountains Abbey:" this  $9\frac{1}{2}$  by 7 print is called, we should say, "A portrait of two tourists, with Fountains Abbey in the distance." If the figure were absent, and three inches cut off the bottom, and the print not toned to the slaty colour it is now, it might be a picture. Taken with Beck's R.R.,  $f/22$ , about 2 sec., at noon, in sunshine, in August, on Ilford ordinary.

SPALDING, F. W. (Norwich).—"Costessey Rectory:" to us a well-known spot, and certainly not the best view of it, we think. Taken with a wide-angle 7 in. Ross, 7 sec., at 11 a.m., in bright light, in July, on Ilford ordinary.

SPENCER, J. H. (Chester).—"A Bit of Black and White:" another snow scene in which the snow is too blank. Taken with Wray's R.R.  $9\frac{1}{2}$ ,  $f/32$ , 1 sec., January 8th ult., 10.40 a.m., in sunshine, on Paget xxxxx. plate.

STEELE, L. J. (London).—"A Saw-mill in the Pyrenees." "This was taken at Cauteret. The mill is worked by the torrent which flows at the side, and is used for sawing logs, which are floated down from the upper pine forests." The camera was placed a yard or two too near. Taken on Kingston Special with French R.R.,  $f/16$ , 2 sec., at 11 a.m., in very clear, bright sun in August.

STEINA, G. (Genoa).—"In the Woodlands of Lombardy." This print recalls very forcibly some of the bright luminous pictures of the French school, and represents a flock of turkeys being driven to a pool of water by a peasant woman. There is rather too much foreground, and the print is overtoned and has yellow whites. Taken with a Lancaster's Instanto, full aperture, cap off and on, at 2 p.m., in September, in bright light.

SUTHERLAND, J. W. (Newcastle).—"Above the Mill:" a very fine print much commended by the judges, but the intensely white water in the foreground is an eyesore which could be avoided by cutting off an inch. Optimus 7 by 5 R.R.,  $f/24$ , 20 sec., 3 p.m., in diffused light, in March. Taken on Thomas' plate.

SWIFT, C. N. (Sedburgh).—"The Village Pond." The competitor informs us this was developed with hydroquinone, an opinion we arrived at at once from an examination of the print. Development has not been carried far enough, or else sun printing has been resorted to. Artistically it would have been improved had a horse been drinking in the pond at the slope. Sands and Hunter's R.R.,  $f/16$ ,  $\frac{1}{2}$  sec., in diffused light, at 4 p.m., in August, on Britannia ordinary.

SWINNERTON, G. W. (Stroud Green).—"Hadley Toll Gate:" or, we should say, part of the toll gate, because the end is cut off. The camera was not upright, and the architecture is consequently not sober, otherwise it is a good print technically. Taken on Ilford ordinary, with wide-angle lens,  $f/32$ , 2 sec., in fair light, at 4.30 p.m. in July.

GOLTON-SYMONS, G. (Plympton).—"Weir Pool." "Very windy afternoon, or it would have been a better negative." Artistically a very pleasing picture, which found considerable favour in the judges' eyes, but is printed far too deeply on pink paper. We should like to see it on a matt-surface paper in a warmer tone, and with 1 in. less foreground. Ross' R.S.,  $f/32$ , 1 sec., bright light, 3 p.m., in July, on Wratten and Wainwright's instantaneous.

TATE, A. H. (Belfast).—"Hay-Making:" another good print, spoilt by want of brilliancy. Taken with Ross' Portable Symmetrical,  $f/32$ , 1 sec., good light in July, at 7.30 p.m., on Thomas's plate.

TAYLOR, C. DOUGLAS (Manchester).—"High Tor, Matlock:" taken on Wratten and Wainwright's ordinary, at 3.45 p.m., in June, sunlight, 6 sec. exposure, with Optimus half R.R.,  $f/32$ . A very good print, but we have seen more pleasing pictures of this taken the other way of the plate.

TAYLOR, G. W. (Chelsea).—"Silver Beeches." This represents an amateur and his friend sitting on the branch of a silver beech, nursing an Instantograph camera; the plate was badly scratched, and the print badly torn at the edges, and has no artistic merits. Taken with single lens, 6 sec., in July, dull light, at 8 a.m., on Ilford ordinary.

THOMPSON, J. (Burton-on-Trent).—"Shanklin Chine." We have here again another attempt to make a picture of this difficult subject. Technically a very good print, but spoilt by an intrusive figure. Taken with single lens,  $f/30$ , 6 sec., in May, in very bright light, at 11 a.m., on Ilford plate.

TUCKER, W. T. (Loughboro').—"In Snowdonia:" technically a very good platinotype print, and pleasing artistically, the values of foreground and distance being very well rendered. Taken with Swift's 12 in. R.R., on Paget's whole-plate,  $f/32$ , 2 sec.

TURNER, J. W. P. (Fulham).—"Putney Park Lane." The competitor's note says, "A bright morning; developed with hydroquinone, Ilford formula; cut down from half-plate to quarter, as lens would not cover the edges. I developed rather quickly." We add there is absolutely no sharp focus anywhere, the negative was fearfully under-exposed, and the print is too black, and shows innumerable cracks. Taken with front lens of portrait combination, 1 min. exposure, in August, at 8.30 a.m., in good light, on Ilford ordinary.

VALON, A. (Ramsgate).—"Through a Gap in the Hedge:" a most fearfully black bromide, entirely without detail in the foreground, and possessing no artistic merit. Taken with Lancaster's Instantograph,  $f/32$ , 5 sec. exposure, in sunlight, at 3.15 p.m., on Ilford rapid.

WALKER, WM. (Nottingham).—"King's Mills," a whole-plate print which requires cutting down most ruthlessly; the lens did not cover sharply, and the print is flat and poor. Taken on Ross' Rapid Symmetrical, open aperture, instantaneous, with Reynolds and Branson's shutter, at 5 p.m., in the summer, on Ilford ordinary.

WARD, MRS. M. E. (Newport).—"On the Edge of the Moor:" taken on an Ilford slow, with 1 sec. exposure, on a bright afternoon in August, with R.R.,  $f/16$ . This is a bright little half-plate platinotype print, though somewhat too patchy, and a little too much foreground.

WATSON, J. A. (Sheffield).—"Rivlin Glen." "The exposure was made as a wave of light was passing, as the day was showery, with sunlight at intervals, there being no continuous sunlight." Technically a good Kallotype print, of pleasing colour, but the sloping outline of the hill wants opposing cloud forms



badly. Taken on Marion's Britannia, with R. R.,  $f/16$ , 3 sec., in August, about noon.

WATSON, JOHN (Newcastle).—"An old Farm-house and Cattle." "The negative was taken in a great hurry. The cattle had just been turned out, and I had to focus and expose as quickly as I could; the clouds are worked in." We regret that this competitor did not leave his sky alone; he has by no means improved the picture, and at least one inch could be spared from the foreground and the sky. Probably the process, print-out platinum, is responsible for a little of the flatness, and this could be remedied by the choice of another process. Taken with R. R.,  $f/16$ , cap off and on, in very good light, at 3 p.m., in June, on Thomas' E. R.

WEBLING, A. H. (Brighton).—"On the Banks of the Tavy," about three or four miles from Tavistock. "There is an old mine close by, known as 'The Virtuous Lady Mine;' why so called I could not find out." Just wanting in atmosphere, but still a very good effect in platinotype. Taken on a cloudy evening in June, with Taylor's R. R.  $7\frac{1}{4}$  in.,  $f/20$ , on a "Brigh-tonian" plate.

WEBSTER, W. H. (Newcastle).—"An Old Landmark:" a good print of a bit of a ruin taken with Underwood's single lens,  $f/11$ , with 2 sec. exposure, in fairly bright light, in December, at noon, on Edwards' Isochromatic Instantaneous.

WELCH, J. H. (Liverpool).—"Dovedale:" a well-known spot, and well taken, but it would have been improved by the distance being less distinct and clear. Taken with Wray's 8 by 5 R. R.,  $f/22$ , 2 sec., in August, fair light, not much sun, at mid-day, on Wratten and Wainwright. The clouds add considerably to the effect.

WHITE, A. (Stockport).—"A Welsh Cottage." "This view is at the entrance to Llanberis Pass; the weather was very wet; and this was taken just after a shower of rain." The print is far too deeply printed. All gelatino-chloride prints squeezed to ground-glass never require such deep printing as when left with their natural surface. Taken with Taylor, Taylor, and Hobson's lens,  $f/32$ , 8 sec., end of August, in a not very good light, at 5.30 p.m. on Ilford ordinary.

WHITE, J. (Dublin).—"The Old Mill:" a little less foreground would have been an improvement, but it is technically a very good platinotype print. Taken with R. R.,  $f/16$ , 20 sec., in May, in dull and rainy weather, at 6.15 p.m., on Paget xxxxx.

WHYMAN, WM. (W. Smethwick).—"The Sleeping Children." "The monument is one by Chantry; it was erected in 1817, in the corner of the south choir aisle, Lichfield, with a window at the head end, allowing a good light to fall upon the figures; at the back is a memorial tablet to their father, Prebendary Robinson, who died in 1812." The figures, which are marble, are far too white, due to the use of too much reducing agent or pyro in the developer.

WILLS, J. (Carnarvon).—"The Afternoon Walk." This competitor has made some attempt at composition, and therefore he is to be commended for this; but the print represents two little girls, exactly the same height, dressed exactly the same and standing exactly in the same position, and the effect is not happy. Taken with Tench's Planographic, 6 in.,  $f/12$ , 3 sec., in September, bright diffused light, 2.30 p.m., on Ilford ordinary.

WILTSHIRE, L. (Norwood).—"Betchworth, Surrey:" about 2 in. of plate are wasted on a perfectly blank sky, and one wonders why it should not have been taken the other way of plate. Taken with Lancaster's Instantograph,  $f/18$ , 4 sec. exposure, in rather poor light, with dark clouds, at 5 p.m., in June, on "Castle" plate.

WINN, E. (Birmingham).—"In the Garden:" probably good as a portrait, but the figure is distractingly white and stiffly posed. Taken with Ross' R.S. 9 in.,  $f/22$ , 2 sec., at 10 a.m. in sunlight, in August, on Ilford ordinary.

WITHERS, A. H. (Reading).—"Shillingford Bridge:" an utterly uninteresting panoramic view, taken with R. R.,  $f/22$ ,

$\frac{3}{4}$  sec., in dull light, at 11 a.m. in August, on Marion's ordinary WOODHOUSE, C. H. (Hereford).—"A Wye Tributary." Taken with the sun in front of the lens, and utterly spoilt by halation. Noakes' R.R.,  $f/22$ , in good light, about 4 p.m., in August, on Ilford Rapid.

WOODRUFF, MISS E. E. (Folkestone).—"Hythe Canal." A fearfully over-exposed negative has given a flat print of a by no means artistic subject. Had some barges been in the near distance, it would have been improved. Taken with Lancaster's R.R. on an Ilford Rapid, about 3 p.m. This competitor has only practised our art fifteen months.

YOUNG, J. B. (Glasgow).—"Near Kinlock Laggan:" taken with Wray's R.R., 8 by 5,  $f/22$ , 3 sec., in rather dull light, at 11 a.m., in August, on Thomas's T. C. E. R. plate. This suffers from a total want of sharpness anywhere, and too much foreground.

## Societies' Meetings.

**Blackheath.**—A meeting was held on the 2nd inst., the Rev. P. McDonald in the chair. Mr. W. Farrington (the Curator) read a paper on "Stereoscopic Photography," which he made most interesting by exhibiting various stereoscopes, and slides in illustration of his remarks. He further explained the apparatus and general *modus operandi* in this attractive branch of the art. Dr. John P. Henry, M.D., B.S., and John Dottridge were elected members of the club. At the next meeting, the Astronomer-Royal (President of the society) will lecture on "Photography as Applied to Astronomy."

**Bolton.**—Ordinary meeting, 2nd inst. The Hon. Secretary showed the snap-shot and "time and instantaneous" shutters of the Thornton-Pickard Company. Messrs. Parkinson and Boothroyd then proceeded to develop several exposed plates, and during the course of development explained the *raison d'être* of obtaining good negatives. This subject was instituted by the Hon. Secretary for the instruction of the younger members.

**Brixton and Clapham.**—A meeting was held on the 4th inst. Dr. Reynolds (in the chair) briefly introduced Mr. Andrew Pringle, who had kindly consented to give an address upon "Development." Mr. Pringle said he hoped the members would pardon any imperfections on his part, as, rather than disappoint them, he had come down to fulfil his engagement, although feeling far from well. The subject in question was a broad one, and he would confine his attention to the main features of the various developing agents. Firstly, what does a photographer desire to produce? A good negative, *i.e.*, a negative that will produce a good print. He denied the theory put forward by Messrs. Hurter and Driffield that after a plate had been exposed, rightly or wrongly, development had nothing to do with the resulting negative. In theory, this might be and probably was correct, but in actual practice it was otherwise. A real artist was a man who could take a picture, knowing almost exactly what result he would get. To produce this result one had the choice of five developing agents, *viz.*, pyrogallol, eikonogen, ferrous-oxalate, hydroquinone, and para-amidophenol. Mr. Pringle advocated the use of these as follows:—To secure pictures with decided contrasts, as for lantern slides, transparencies, and the like, use hydroquinone with caustic soda, but he did not advise its use for landscapes, still less for portraits. Where a minimum of exposure had been given, such as in hand-camera work, eikonogen would yield the best results. The chief characteristic of ferrous-oxalate was that it had the property of not reducing the silver where the light had not fallen, and in his opinion was not so much attended to in this country as it should be. Para-amidophenol and similar ones, such as the new developer, Rodinal, were also good all round agents, especially for quick exposures. Mr. Pringle, in alluding to the latter, said that this was the first public opportunity he had had of giving his opinion upon it; that, after lengthy experiments, he had found its working very satisfactory, but recommended that it should be diluted with twenty times (instead of thirty, as contained in the instructions) its bulk of water. In conclusion, the lecturer said that where there was any doubt as to exposure, and for general all round work, he had found nothing at present to come up to "good old pyro and ammonia." A short discussion followed upon the various points in the lecture, and several questions were answered by Mr. Pringle.

**Coventry and Midland.**—A series of prize slides were shown on the 3rd inst. The slides are considered one of the finest sets on exhibition. They are indeed some of the best that have been on view in Coventry, and were much appreciated by a large number of ladies and gentlemen members and friends who were invited. The lantern was worked by the Hon. Secretary (Mr. T. W. Owen), assisted



by Mr. F. J. Harker. The description of the views was read by Mr. W. F. J. Orton. Several fine slides made by Mr. Orton were afterwards shown; also two very fine slides, scenes of the late Christmas hoar frost on the Warwick Road, taken by Mr. Owen, were shown and very much appreciated.

**Camera Club.**—On the 4th inst., Sir G. R. Prescott in the chair, Mr. Archer Clarke gave, on behalf of the Incandescent Light Co., an account of the Company's lighting and its applicability to various purposes. A demonstration of its use in the optical lantern was given, lantern-slide pictures being projected on the screen. The bulk of the evening was devoted to an address and demonstration by Mr. S. Herbert Fry, who practically illustrated the working of a newly-constructed enlarging lantern, which, without the use of condensers, gave an equal illumination of a large negative.

**Crewe.**—A public lecture and lantern evening was given on the 25th ult.—"Norway and its Wonders," by Paul Lange, Esq., of Liverpool. Mr. Earl presided in the absence of F. W. Webb, Esq., President of the society, and there was a large audience present. Mr. Lange, who was warmly received, said he was proud to be called upon to deliver a lecture on so interesting a country as Norway, and after describing this favourite resort he hoped it would result in inducing many present to pay a visit to that country. Having described the route from Crewe to Hull, thence, by steamer, to Bergen, he gave an interesting description of the most enjoyable route for tourist and photographer to follow. The views thrown upon the screen were excellent, giving an admirable illustration of life amongst the mountains of Norway. The views were charming in themselves, and the lecturer's comment on the beautiful scenery greatly increased the pleasure of his audience. The cloud studies were magnificent, and were loudly applauded. The lecture throughout was listened to with marked attention and heartily appreciated. A conversation in connection with the above society was held on the 3rd inst., when a good display of photographs were on view in the council room, including a fine collection by Paul Lange, Esq., of Liverpool, A. H. Hignett, Esq., Crewe, Mrs. J. N. Hignett, Chester, photographs and transparencies by members of the section, and a good display belonging to the London and North-Western Railway Company, kindly lent by F. W. Webb, Esq. There were also shown some fine specimens of art in black and white by Mr. C. E. Jones. The Crewe Photographic Company, Limited, had a good show, including the Autotype and Alpha processes.

**Croydon.**—The annual meeting was held on the 1st inst., when a large number of members assembled, in great measure due, no doubt, to the exhibition of 1891 "Holidays with the Camera," Prize Pictures which were tastefully arranged in sets on the walls, and which attracted much attention. The President read the annual report, which, after due discussion, was adopted, and on the motion of Mr. Nathaniel Waterall, ordered to be printed. Subsequently, Mr. Packham was selected to preside over the elections, which resulted as follows:—President, H. Maclean, F.G.S.; Vice-President, B. Gay-Wilkinson; Treasurer, A. J. Sargeant; Auditor, W. Daniells; Secretaries, Messrs. White and Isaacs. Council, Messrs. Arthurton, Blow, Burrows, Hirst, Neeves, Oakley, Overton, and Packham. On the proposition of Mr. Oakley it was decided to hold the annual dinner in the early spring. On the 15th Mr. Weir-Brown will lecture on "Warm Tones on Bromide Paper."

**Dundee and East of Scotland.**—Feb. 3, Mr. J. D. Cox (President) in the chair. The President intimated that the Council had voted the sum of £3 3s. to the Maddox Testimonial Fund. He also intimated that the Association had affiliated with the Photographic Society of Great Britain. A demonstration was given of the stripping and enlarging powers of "Cresco-Fylma." Two negatives were treated with the solution, and in a very short time the films were removed from the glass. After soaking for some time in water the films were floated on to a larger-sized glass. This was done successfully, there being no distortion, but very little enlargement, probably owing to too cold water being used for washing and also to the plate not being suitable. "Cresco-Fylma" should prove useful for removing the films from cracked negatives, allowing them to be placed on new glass; and also in carbon printing, where a reversed negative is necessary to save double transfer. Demonstrations in enlarging were then given, first by Mr. G. G. Maclaren, who exhibited his method of working. His apparatus consisted of a two-wick Sciopticon lantern, to which was attached a quarter-plate camera. The negative was placed in a groove inside a ground-glass screen thus having the ground-glass between the condenser and the negative, this arrangement getting rid of the light mark on the enlargement caused by the dark space between the flames. An enlargement was successfully exposed and developed before the meeting. The prizes in the "Animal Studies" competition were awarded to (1) V. C. Baird and (2) G. G. Maclaren.

**Glasgow.**—The third general meeting of the session was held on the 4th inst., Mr. Wm. Lang, jun., F.C.S., President, in the chair. Three new members were elected, viz., John Brown, 8, Gordon Street;

Alexander Macdonald, Brodick; Charles Sweet, Rothesay. The annual reports of the Treasurer and the Secretary were submitted and adopted. It was unanimously agreed that the association become affiliated with the Photographic Society of Great Britain. The construction and use of Dallmeyer's new telescopic photographic lens were explained to members. Views were shown on the screen, the subject being a church half a mile distant, taken from the same position with an ordinary lens, and with the new lens, the size of the image produced by the latter being six times larger than that by the former instrument. Uranium-toning of bromide prints, and of transparencies, was discussed and examples shown.

**Halifax.**—On the 1st inst. an interesting exhibition of the AMATEUR PHOTOGRAPHER 1891 Prize Slides was held at the rooms of the Club. There was a good attendance of members. It was decided during the evening to have a portrait competition (confined to the amateur members of the Club) at the next meeting, on the 26th inst. The portraits are to be taken in the Club studio, and Mr. M. Manley, who takes a great interest in the Club, offered an automatic plate rocker for the best portrait exhibited.

**Herefordshire.**—A lantern evening was held on the 2nd inst. at the Working Boys' Home schoolroom, kindly lent by the managers of that institution. The room was well filled with members and friends. Mr. Alfred Watkins then opened the proceedings, and explained that the series were a set of prize slides kindly lent by a contemporary for the occasion. Mr. E. Horth very kindly manipulated the lantern, Mr. W. E. Haines reading the description of each slide as thrown upon the screen. The series comprised figure studies, landscape, general, marine, instantaneous, animal, street, floral, and skeleton studies, and all being prize slides in their respective classes. The general studies were very good, also the instantaneous street scenes depicting daily life. After these were finished, Mr. Horth showed some statutory subjects, which were very fine.

**Hexham.**—The first monthly meeting was held on the 2nd inst., when there were present a large number of members and friends. Slides were exhibited by means of the limelight lantern by the following members:—Rev. C. Taylor, Mr. John Hunter, Mr. C. C. Hodges, and Mr. John Gibson, jun. (Hon. Sec.). Mr. J. Pattison Gibson complimented the members upon their excellent work, and gave them some useful advice. Mr. Gibson then introduced Mr. Edgar G. Lee, Hon. Sec. of the Newcastle Association. In doing so, he said Mr. Lee had not only brought one hundred of his local slides but also fifty by the best workers in the kingdom, and he was pleased to say Mr. Lee's slides would suffer nothing by comparison with them. Mr. Lee then exhibited his slides, which have won so many medals at home and abroad, and they were much admired.

**Lewes.**—A meeting was held on the 2nd inst. when there were present Messrs. C. A. Wells, J. Tunks, H. Curtis, G. Constable, H. Constable, B. V. Reeves, E. Brummett, G. J. Wightman, E. J. Bedford, and Percy Morris. Samples sent by the Eastman Company of their new rapid bromide paper were given round to members, many of whom promised to bring results of their experiments to the next meeting. The result of the competition for the best print illustrating "Toil" was announced, the award going to Mr. Percy Morris, who takes the exposure meter presented by Mr. Watkins for competition among members of the society. Mr. Wightman then read an able paper on "Platinum and Bromide Printing: a Comparison and Contrast." In dealing with the subject, he pointed out that although in a properly executed platinum print there were certain qualities which could not be excelled or even equalled by bromide, yet for ease and certainty in working, combined with its adaptability more or less for the greater percentage of negatives, the balance lay in favour of the latter. At the close Mr. Wightman answered several questions put to him by those present.

**Lewisham.**—On the 5th inst. Mr. Alfred H. Miles, Vice-President, in the chair, Mr. J. Traill Taylor gave a lecture entitled, "Bye-paths of Photographic Optics," under which heading he introduced the subject of the tele-photographic lens. He passed round and explained his own, which he had made from lenses taken out of an ordinary opera glass, and showed what great magnifying powers could be obtained with it, and by means of diagrams, compared it with Dallmeyer's. The lecture proved intensely interesting, and only a verbatim report with diagrams could do it justice.

**Liverpool Y.M.C.A.**—A very pleasant evening was spent on the 3rd, when Mr. E. M. Tunstall, late Hon. Secretary of the Liverpool Photographic Society, gave his lecture entitled "Holiday Rambles," illustrated with about 150 lantern-slides, from pictures taken on his holidays. The pictures, which were excellent, illustrated all the well-known picturesque bits of Britain, etc., and were photographically and geographically described by Mr. Tunstall in a bright and chatty manner that was exceedingly interesting. The subject for next week is on "American Humorists," by Mr. N. Stephen, jun.

**Midland Camera Club.**—General meeting on the 5th inst., the President, Dr. Hall Edwards, in the chair. The Hon. Sec. reported that Mr. W. J. Spurrier had been elected assistant hon. sec. and



librarian. A suggestion was made that at the end of the winter session a conversazione and exhibition of members' work be held, and the Council are considering the matter. The Hon. Sec. showed Chadwick's lecturer's reading lamp, and Dr. Huxley the "Holiday" developing lamp. Professor Allen then gave his paper upon the "Philosophy of Restraint in Development," which he illustrated profusely by diagrams, etc., upon the black board, samples of negatives, and lantern slides. In the course of an intensely interesting paper he said he could only agree with Hurter and Driffield up to a certain point, and showed three slides as a proof. Each had received about fifty times the correct exposure, one developed with normal developer completely solarised, one restrained considerably was about right, the third with previous soaking in restrainer and large proportion in developer as well gave the exact appearance of under exposure. He also expressed a very strong objection to weak developers, and explained his reasons by diagrams of the film and image formed. A very interesting discussion followed, in which the President, Dr. Leech, A. J. Bailey, Dr. Huxley, Dr. Nicol, and the Hon. Sec. and others took part. Owing to pressure of work Professor Allen cannot promise to get the paper ready for printing at present, but it may be expected ere long. Councillor W. J. Lancaster was nominated for membership.

**North Kent.**—A meeting was held on the 4th inst., Mr. J. K. Barlow in the chair. Mr. E. W. Field was elected a member. Mr. Hodson was appointed second delegate to the P. S. G. B., and the Secretary was appointed sub-delegate. The "Yosemite Valley" set of lantern slides, prepared by the California Camera Club, were then shown. Some slides by Mr. Field followed.

**North London.**—On the 2nd inst., Mr. G. J. Clarke in the chair, "The Journal of the Photographic Society of Great Britain" was laid on the table, also the syllabus to the end of June. Mr. Gregory, representing the Eastman Company in the absence of Mr. H. M. Smith, who is suffering from the all-prevalent epidemic, introduced the Company's series of Kodak lantern-slides, prefacing the exhibition by a brief description of the latest Kodak improvements. The slides, representing scenery in England and other parts of the world, were highly appreciated, many of them being remarkable for their beauty as pictures, as well as for their perfection as photographs, and all showing the capabilities of the Kodak in its various forms, and the power and delicacy of the rollable film. The slides were shown with a new special lantern of Humphries' make.

**North Middlesex.**—The first technical evening was held on the 8th inst., Mr. C. Beadle in the chair, and thirty-seven members were present. Two members having been elected, a number of queries were found in the question box, ranging from the elementary to the abstruse, and, as is frequently the case, the simplest of the queries led to animated and interesting discussions. Objects of interest were called for, and the Chairman produced a very successful example of combination printing. As the foreground, printed from one negative projected irregularly into the middle distance printed from another, details of working were asked for. The Chairman said that after printing the foreground he had painted it over with burnt sienna, finding it much easier than cutting out a mask. The distance was then printed in from the second negative. Mr. Cox passed round a number of negatives and prints showing marked peculiarities in development or general treatment. He also exhibited a shutter capable of giving exposures from  $\frac{1}{10}$  second to any longer duration the operator might require. Mr. Marchant then showed the fuzee flash-light apparatus, by the aid of which two portraits were taken on extra rapid plates, lenses working at  $f/6$ . These were developed successfully by Mr. H. Smith with paramidophenol. Mr. Smith read a short paper on the developer, giving formulae and his experiences with it, and showing negatives of great softness and good printing density, which he had obtained by its use. Mr. Gandon then presented the Society with a very fine framed enlargement of a portrait of the President, which will in future adorn the walls of the room. Mr. Chipper passed round for inspection some cheap lines in cameras, lenses, etc. A lens of  $\frac{1}{4}$  in. focus, R.R., working at  $f/8$ , which a member had found by trial to cover a half-plate when working at  $f/22$ , and selling at 4s. 6d., attracted much attention as being suitable for hand-cameras. The annual dinner was announced to take place on March 12th.

**Phot. Soc. of Great Britain.**—The first meeting of the affiliated societies was held at the Society's rooms, 50, Great Russell Street, on Monday, February 1st. The following delegates were present:—Messrs. G. L. Addenbrooke (P. S. G. B.), W. Bedford (P. S. G. B.), E. Clifton (Photographic Club), F. J. Cobb (Holborn Camera Club), C. C. H. D'Aeth (Dorset A. P. S.), P. Everitt (London and Provincial P. A.), E. C. Gardner (Finsbury Technical College P. S.), E. A. Ryman Hall (Oxford P. S.), S. Hodson (North Kent P. S.), A. Mackie (North London P. S.), J. McIntosh (North Middlesex P. S.), and T. A. Pope (Photographic Society of India). Mr. W. Bedford was chosen Chairman, it being agreed that the election of a delegate of the Photographic Society of Great Britain to the chair was not to be

taken as a precedent. Mr. Everitt having stated that his Society thought the delegates appointed by the affiliated societies should not be members of the Photographic Society of Great Britain, the meeting proceeded to consider the general rules suggested by the Council of the Photographic Society of Great Britain in the circular of July 6th, 1891. After considerable discussion, the rules were amended and were referred to the Council of the Photographic Society of Great Britain for approval. Mr. A. Mackie then referred to the new order of the Inland Revenue relating to methylated spirit. It was decided that the delegates should bring the matter before their respective societies. A committee consisting of Messrs. E. Clifton, P. Everitt, A. Mackie, and V. A. Pope were appointed to revise the wording of the amended rules, and to make arrangements for the circulation of lantern slides pending the appointment of an executive.

**Polytechnic.**—Mr. W. E. Debenham presided at a meeting on the 5th inst., when a paper was given by Mr. Bennett on "Lenses." Mr. Bennett illustrated his remarks by means of a large number of diagrams on an enlarged scale, specially prepared for this occasion. There was a good attendance of members. Mr. Debenham subsequently drew attention to the effects of halation, and described a method of backing plates, and distributed some bottles of a solution for backing plates amongst those present. The solution is applied with a brush and left to dry, and dissolves away in the developer without injury to the latter.

**Pudsey.**—A meeting was held on the 4th inst., Dr. Hunter (President) in the chair, and Mr. J. Goodman read a paper on "Enlargements with the ordinary Optical Lantern," and illustrated his paper by making an exposure, enlarging three diameters, and developing the print before the members. Final arrangements were made for the members' lantern slide competition to be held in March. Each competitor will be expected to contribute six slides made from negatives taken during the preceding season.

**Richmond Camera Club.**—At the meeting on the 5th inst., Mr. Cembrano presiding, the monthly lantern show took place. Slides were shown by Messrs. St. John Hunt, Davis, Neville, Hunter, Ramsay, and other members, as well as a number of very beautiful slides by Wilson, Reed, Brooks, and other well-known professionals, kindly brought by Mr. Dick. The attendance at this meeting was about the largest on record.

**Rotherham.**—The monthly meeting was held on the 4th inst. Mr. Isle Hubbard, M.S.A., presided. The Secretary reported with regard to the arrangements for the second annual exhibition to be held in the St. George's Hall, Rotherham, on Tuesday and Wednesday, February 23rd and 24th. The venture, he said, promised to be most successful from a photographic point of view, and the loan collection of exhibits would greatly add to the interest. Specimen packets of Eastman bromide paper were distributed for trial purposes. Mr. G. T. M. Rackstraw, a Vice-President, gave an interesting demonstration on lantern-slide making, by contact, using ordinary commercial lantern plates, and hydroquinone with hydrate of soda developer. Toning, etc., were also illustrated.

**Sheffield.**—The ordinary meeting was held on the 2nd inst., Mr. B. J. Taylor in the chair, when, after the election of a new member and the routine business, the Secretary announced that the Eastman Company had sent a few samples of their new bromide paper for trial by members. He also announced that the Secretary of the Rotherham Photographic Society had written asking the members to kindly help them at their exhibition on February 23rd and 24th, by sending them a few frames of photographs. The prizes for the annual competition were presented to the following gentlemen, viz., Messrs. Crowder, Beck, and Bromley. The negatives of the winning pictures were passed round and greatly admired. Mr. Geo. Bromley was appointed to give his lecture entitled "Stereoscopic Pictures," but as the evening was getting late that gentleman only gave a general outline of same, and it was adjourned until the April meeting.

**South London.**—On the 1st inst., the President, Mr. F. W. Edwards, in the chair, a number of 24 by 20 uranium-toned bromide prints on Naturalistic paper were, by the courtesy of the Fry Manufacturing Company, brought to the meeting for the inspection of the members, who were much interested in them. Donations of books to form the nucleus of a club library were then announced, after which Mr. Maurice Howell, M.P.S., read a paper on "The Chemistry of Photography." The lecturer dealt with the subject historically, noting carefully the chemical changes which took place in working the earlier processes of photography, viz., daguerreotype, calotype, talbotype, Archer's collodion process, as well as the modern methods of producing negatives and positives. A large number of experiments made from time to time with the view to improving the art were also dealt with. It may be mentioned that Mr. Howell's interesting collection of talbotypes at the Crystal Palace Exhibition, 1899, were much admired. Mr. Slater brought to the meeting a new pattern half-plate camera of good material and workmanship, which he is about putting on the market, to be sold at the low price of £4, with three double dark slides.



**Sydenham.**—A lantern evening was held on the 2nd inst. Mr. Low Sarjeant, of the Croydon Microscopical and Natural History Club, showed a large number of very fine slides, some of which had been developed with para-amidophenol, and these certainly showed to great advantage, the deepest shadows even being very clear and transparent. There was a very good attendance of members and visitors, who greatly appreciated Mr. Sarjeant's kindness.

**Todmorden.**—A meeting of the photographic section of the Scientific Association was held on the 4th inst., presided over by Mr. Howorth Fielden. Dr. Measures read a paper on "Beginners' Difficulties." This is the first paper that has been read, and great interest was taken in it by members present. Four new members were admitted.

**Wakefield.**—On 29th ult. an assembly of nearly 200 persons, being members of this society and their friends, witnessed a lantern entertainment promoted by the committee. The Editor of the AMATEUR PHOTOGRAPHER kindly lent for the occasion the collection of over 150 Prize Lantern Slides for 1891, and in addition to these, the society's own members combined to exhibit fifty choice views taken by themselves. The lantern used belonged to Mr. J. H. Chaplin, and under his able management, efficiently assisted as usual by Mr. Harry Haigh, no single hitch occurred. At the outset, Mr. A. W. Stanfield, J.P., the President, gave a short introductory address remarking upon the progress the society was making, and emphasising the advantages to be derived from membership. The Prize Slides were a striking collection of photographic skill, depicting a variety of work in landscape, architecture, portraiture, and animal studies. But the chief interest seemed to centre in the local views exhibited by Messrs. S. Bottomley, C. W. Richardson, H. Crutchley, J. H. Chaplin, G. F. Firth, Harry Haigh, H. A. Halliwell, and Capt. Norwood. Many of these were at once recognised and heartily applauded. The recent visit to Wakefield of the late Prince Albert Victor was an opportunity not to be missed by our amateurs, and special and peculiar interest was therefore manifested on there being thrown upon the screen a faithful representation of the Royal spectacle yet vividly remembered. One view by Mr. Richardson was taken in Wood Street as His Highness's carriage was passing the Town Hall, and another by Mr. Firth as the Prince was passing the Cathedral corner opposite the *Express* office. Pretty spots at Kirkthorpe, Nostell, Newmillerdam, Haigh, and other places in the district were reproduced and readily appreciated.

**Wigan.**—Wednesday last was a lantern night. The AMATEUR PHOTOGRAPHER 1892 Prize Slides were exhibited before a good number of members and friends, who were very lavish in their expressions of admiration as the slides were passed through the lantern. After these had been disposed of, several members' slides were shown. The lantern, which was again admirably manipulated by Mr. Hodgson, was a new one, designed and made by that gentleman, and was used for the first time that night.

**Wolverhampton.**—A meeting of this society was held on the 2nd inst., the Vice-President, Mr. T. Ironmonger, in the chair. The evening was devoted to the exhibition of members' lantern slides. Amongst the collection there were some very fine specimens, especially the portrait studies by Mrs. Welford. The following gentlemen were elected as members:—Messrs. Orme, Duncan, Battersby, and Hall. Messrs. Silvers and Greenway were proposed as members. It was decided to hold the annual meeting on March 22nd. Messrs. Holcroft and German were appointed as auditors.

### SOCIETIES' FIXTURES.

- Feb. 11.—LONDON AND PROVINCIAL.—"Isochromatic Plates," by John Howson.  
 "11.—HACKNEY.—"Illustrated Journalism," by T. C. Hepworth.  
 "11.—NORTH KENT.—"Yosemite Valley" slides.  
 "12.—RICHMOND.—"Photographing Pottery," by C. E. Hodgkin.  
 "12.—WEST LONDON.—"The Plate and Negative Dodging," by J. A. Hodges.  
 "15.—CROYDON.—"Warm-Toned Enlargements," by J. Weir Brown.  
 "15.—GRAPHIC.—Lantern Evening, Mr. Watson.  
 "15.—S. HORNSEY.—"Intensification," by S. Lamy.  
 "16.—NEWCASTLE.—"Platinum Toning," by T. O. Mawson.  
 "17.—PUTNEY.—"Carbon Printing," by the Autotype Company.  
 "17.—COVENTRY AND MIDLAND.—"Negative Making," by Mr. Andrews.  
 "18.—BRIXTON AND CLAPHAM.—"Lenses," by H. Crouch.  
 "18.—LONDON AND PROVINCIAL.—Lantern and Musical Evening.  
 "18.—CLEVELAND.—"Yosemite Valley" slides.  
 "18.—CAMERA CLUB.—"Orthochromatic Photography," by S. B. Webber.  
 "19.—LEWISHAM.—"Light Measurement," by Prof. Lambert.  
 "19.—RICHMOND.—"Makeshifts," by Mr. Faulkner.  
 "19.—BRISTOL.—"In and About Columbus."

**Warwickshire Photographic Survey.**—An ordinary meeting of the Photographic Survey Council of Warwickshire was held on February 1st at the Colonnade Hotel, Birmingham. Mr. J. B. Stone presided, and the attendance included Messrs. Edwin Smith, F. G. Lyndon, W. Sherwood, J. Udal, E. W. Badger, J. Cotton, and W. Jones, together with many members of the Birmingham Photographic Society, and J. H. Pickard and W. J. Harrison (Hon. Secretaries). Mr. Richard Tangye wrote apologising for inability to be present. The Chairman observed that a considerable interval had elapsed since the last meeting, when the scheme for the photographic survey of the county was practically completed. From that time to the present it might appear to the outside world that nothing had been done and no progress made. On the contrary, in all directions most satisfactory labours had been bestowed upon the work which the Council desired to accomplish, and he was unable to find words in which adequately to express the excellence of the work which had been done. He ventured to say that the series of pictures which had been sent in were unequalled by any collection for the like purpose which had been made throughout the world. He spoke as having a very large experience of photographic work, and he believed he might safely challenge the whole world to produce better local work for a specific purpose, than had been sent in as the result of the county survey. The character of the objects portrayed was as varied as one could wish to have them. The archaeological features of the churches were presented in a hundred different forms. Old mansions, some of them taken from a dozen different points of view, were included in the collection. Lanes, cottages, peasantry, all of which were so fully described in the works of Shakespeare and other writers who had made Warwickshire famous, were represented in the views which had been sent in, and were such as would be of enormous value to succeeding generations. What was required now was a catalogue of the views. So far the appeal to the voluntary efforts of distinguished amateur photographers in the country had been responded to so liberally that more than seven hundred pictures had already been contributed to the collection. Some of them had been framed, and it was intended to frame the whole number, making them all of uniform size. The Survey Council had been formed with the object of enlisting, directing, and ensuring the co-operation in the survey of all the photographic societies in Warwickshire. The various societies at Coventry, Leamington, etc., had been assigned districts to work, and had been written to again and again. But the whole of the work sent in was due to the efforts of the members of the Birmingham Photographic Society alone. He regretted this, and hoped for more assistance in future years. Having secured so many pictures, and thus assured themselves of the success of the movement, the Council had approached the authorities of Birmingham in order that the public might have an opportunity of inspecting the views. He had waited upon the Mayor, who at once agreed with the proposal that the photographs should be made public property, and preserved in one of the city buildings for reference. Following out that idea, the Mayor consulted with the Free Libraries Committee and the Art Gallery Committee, and Mr. Whitworth Wallis, the outcome being that arrangements had been made for an exhibition of the views during the spring or summer months at the Art Gallery. The Free Libraries Committee would afterwards take possession of them, and see that they were properly stored. The Survey Council had committed themselves to an expenditure of about £100 which had been necessary for the undertaking, but that was a very small sum in comparison with the important results which had been obtained and the further success which was anticipated. The Mayor and Mr. Whitworth Wallis were hoping that the exhibition would be an annual one, and they promised so far as they were able to grant the same facilities for showing the works to the public in future years, so that practically the whole scheme was an assured success. Mr. Pickard announced the receipt, in reply to the Council's circular, of promises to contribute views from Mr. H. J. Whitlock, Mr. John Collier, Mr. Harold Baker, and others. A large number of photographs—mostly whole-plates, and in platinotype—were laid before the meeting. Special mounts and frames, and a conveniently-designed cupboard in which all the mounted prints belonging to the Survey are kept, were then exhibited. Full particulars are kept with respect to each photograph, and the printed catalogue will be a valuable contribution to the history of Warwickshire.

**Mr. C. Vernon Inkpen, of Victoria Road, Southsea,** asks us to notify that he is the sole inventor and patentee of the one-movement automatic hand-camera that has been on the market under the name of "The Repeater," and that the license to Mr. Cusworth, maker of the said camera up to the present, has been revoked.

In consequence of pressure on our space many articles, notes, etc., have been unavoidably held over.



## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the **number and full title of the query** referred to.

## QUERIES.

**5430. Development.**—What is the safest way to develop a drop-shutter exposure, 1-30th second, on Ilford extra-rapid and with Ilford hydroquinone developer? Any hints will much oblige.—**ABORIGINAL.**

**5431. Platinotype Prints.**—How can I manage to develop platinotype prints without their curling up in the bath? I cannot get mine to float flat whilst developing; does it matter whether prints are face upwards? Any hints will much oblige.—**ABORIGINAL.**

**5432. Hymns for Slides.**—Can some one tell me where I can get printed hymns suitable for making lantern slides from? I notice that the slides to be had from dealers are usually artistically finished with floral borders which add greatly to their appearance. I have tried many places, but almost invariably the words are either mixed up with the music or printed in a way that prevents their being photographed, *e.g.*, when the verses are not all in one column.—**W. P. C.**

**5433. Stereoscopic Camera.**—Will any reader kindly inform me if it is possible to make a Lancaster's half-plate Instantograph into a stereoscopic camera; if so, how to proceed?—**R. E. A.**

**5434. Formulae.**—Will some one kindly give me Marion's formulae for eikonogen, and Thomas' formulae for hydrokinone, both for negatives, stating whether it is advisable to keep the bromide in a separate solution or not?—**TASMA.**

**5435. Copying.**—I should be glad if any of your readers can give me information as to the correct exposure and best stop for copying prints, outline drawings, with a half-plate camera and Ross' Rapid Symmetrical lens:—(1) Copying outline engraving same size in February in bright light, with sun shining strongly. But camera and print in diffused light in the shade under north wall, with a slow plate (say 18 sensitometer) and with smallest stop, *f*/84? (2) Copying under similar conditions in June? (3) Copying under similar conditions in June a photograph? (4) Copying under similar conditions in June outlines in black and white? (5) Whether the smallest *f*/64 stop is recommended as best for copying? (6) What allowance approximately should be made in the length of exposure for an increase or decrease in distance from object? By assuming a distance of 15 in. of the focussing screen with a distance of 15 in. of object from optical centre, to give a picture of the same size, is it necessary to make any allowance in length of exposure greater or less in accordance with increased or decreased distance from object? Is intensification generally necessary to obtain good printing negatives?—**PALLAS.**

**5436. Opalines.**—In making these I have great difficulty in getting the whole of the print to remain in optical contact with the glass. The print looks all right while wet, but when dry there are patches all over where it has left the glass. I use the finest gelatine I can procure, and squeeze the print well down? Kindly state proportion of gelatine which gives best results, and say how I can avoid above difficulty.—**LENS.**

**5437. Bromide Paper.**—Could any reader inform me if a view or portrait could be taken direct through the camera on bromide paper?—**Puzzled One.**

**5438. Shutter.**—I have just bought one of Tylar's rebounding shutters for a start in instantaneous work. Would any kind reader tell me if it works too quickly for a single landscape lens, and if so, how could I make it work slower? Any assistance would much oblige.—**Puzzled One.**

**5439. Copying.**—Would any kind brother amateur give me a little help as to the following? I want to copy a c.d.v. vignette portrait. It is a little faint, and I should like to copy it a bit darker. I know how to

arrange the camera and what it will require as to the length of exposure to copy an ordinary photograph, but this being a little faint, would it be best to give it a little longer exposure, or shorter than if it was a photograph of ordinary density, or could I improve it in development? I use pyro and ammonia. Any information will greatly oblige.—**R. V. B.**

**5440. Development.**—How should snap-shots, taken with Lancaster's Instantograph, using Ilford ordinary and same maker's hydroquinone formula, be developed? Also should I get better results with pyro?—**W. WHITE.**

## QUERIES UNANSWERED.

Jan. 8.—Nos. 5318, 5304.  
 „ 22.—Nos. 5374, 5380, 5382, 5383, 5387, 5391, 5392, 5395, 5396, 5397.  
 „ 29.—Nos. 5398, 5400, 5409, 5413.  
 Feb. 5.—Nos. 5419, 5420, 5422, 5423, 5426, 5427, 5429.

## ANSWERS.

**5337. Encaustic Paste.**—As no one seems disposed to answer "Termini's" query, allow me to state that Mr. Wall, in his "Dictionary," says that the first formula "is decidedly the best," although the second is the more simple. I use a burnisher myself, and am therefore unable to give my own experience.—**G. P.**

**5357. Negatives.**—There are so many degrees in each of these faults that it is difficult to give a complete answer. (1) When not very much under-exposed there is no gradation, and prints produced from such a negative are what are termed *hard* prints. Under-exposed negatives lack detail according as they have been under-exposed. (2) Thin and devoid of contrast, but full of detail. (3) Lacking in density and detail. (4) Over-development gives negatives so dense that the details are masked in the substance of the negative.—**G. P.**

**5378. Making Hand-Camera.**—I regret an unfortunate error which appeared in my reply to this query in the *AMATEUR PHOTOGRAPHER* for January 29th. It is there stated that an article appeared in *Work* No. 72. It should have been *Work* No. 70.—**G. P.**

**5381. Tylar's Window Shutter.**—It is given in Wall's "Dictionary" as 1-33rd sec. for sky, 1-28th sec. for foreground.—**D. P.**

**5385. Clip for Dark Slide.**—Messrs. Watkinson and Co., Harrison Street, New Briggate, Leeds, will make and affix this, or any special fitting that may be required, to drawing and order. I have found the workmanship excellent, and their charges wonderfully low.—**G. P.**

**5390. Waxing Paper Negative.**—When I have occasion to do this I use castor oil, and I find it all that could be desired. It penetrates the paper well, and is colourless, the one quality reducing the granulation which is often noticeable in prints from paper negatives, and the other not hindering rapid printing. Rub a liberal quantity of the oil over the back of the negative, allow to lie until the paper is well saturated with it, and then rub off superfluity with a soft rag, taking great care that none gets on to the film side of the negative.—**G. P.**

**5398. Hand-Camera Finders.**—Cut the hole rather larger than is required, then point your camera to some object and mark with a pencil on the ground-glass of the finder the outline of the object as seen on the focussing screen of your hand-camera.—**G. P.**

**5415. Gelatino-Chloride Paper.**—See letters in same number as query. If turpentine and wax be used no spots will occur. If talc is preferred, you can get rid of the spots afterwards by rubbing with powdered pumice stone.—**R. A. R. BENNETT.**

**5415. Gelatino-Chloride Paper.**—After going over the glass with the cotton wool from the talc bottle, rub well with an old silk handkerchief or soft rag, so as to remove every visible trace of the talc, and squeeze very firmly with a piece of stout blotting paper over the back of the print.—**THE KID.**

**5415. Gelatino-Chloride Paper.**—The bright spots are caused by the imperfections of the ground-glass, and not from using talc, as you suppose. Why use talc? French chalk is much better, obtains better results, which should be the goal kicked at. Make a paste of emery-powder (or knife-powder) with water, and with a pumice stone rub the glass well; you will then remove the small particles of shining glass, the cause of your trouble.—**CYANIN.**

**5416. Dry Pyro Developer.**—The best way to use a pyro developer is to make up 10 per cent. solutions, preserving the pyro with very slightly acid sodium sulphite. If preferred, the pyro can be used dry with 10 per cent. solution of bromide and ammonia. Directions as to 10 per cent. solution have been given so often in this journal that it is waste of space and time to repeat them.—**THE KID.**

**5416. Dry Pyro Developer.**—Place 1 oz. of ammonium bromide into a cup, add 2 oz. of water, stir till dissolved, and make up to 3 oz. with water, then transfer to one of the dropping bottles. Dilute 1 oz. of 880 ammonia with 2 oz. water, pour into another dropping bottle. When about to develop, pour into the measuring glass 1 oz. of water, and add six drops each of the bromide and ammonia solutions, and 2 gr., or as much as will lie on a shilling, of dry pyro. This developer is weak in ammonia, which should be added in quantities of three drops at a time, as is required.—**G. P.**

**5416. Dry Pyro Developer.**—Let dropping bottle A contain some liq. ammonia, 880, make a solution of ammonium bromide, 1 oz. to 1½ oz. water, filter and transfer to dropping bottle B. It will be well to have these bottles of different sizes, in case the labels should come off. Keep the pyro dry in a tin or wide-mouthed bottle. To develop a quarter-plate, take 2 oz. of water, add 4 gr. pyro, 4 drops of A, and 2 drops of B, and you will have a developer of normal strength. The best method of making a pyro developer is a matter of opinion, each maker of plates having his own formula.—**T. DOWLING.**

**5416. Dry Pyro Developer.**—Make a stock solution of—

|                      |    |    |       |
|----------------------|----|----|-------|
| Bromide of potassium | .. | .. | 2 dr. |
| Water                | .. | .. | 4 oz. |
| Liq. ammonia 880     | .. | .. | 2 "   |

Weigh 3 gr. of pyro, to this add 2 oz. of water and four drops of No. 1 solution. When the development seems to hang fire, pour off into the developing cup, add one or two drops of this stock solution, repeating until developing finished.—**CYANIN.**

**5417. Bellows.**—I am afraid that if the outside measurement of back were only 7½ in., there would be little room for the folds. My own camera has a bellows 8 in. square outside, and that just barely gives the necessary width inside. When ordering bellows, you need only state the dimensions of the back and of the front of the camera, and the maker will understand what is wanted. Sixteen inches is a good length for a half-plate camera bellows.—**G. P.**

**5418. Help Wanted.**—What can you mean? There is an instrument known as a pair of scales. You put the weight or weights marked with the required amount on one side, and as much of the substance as will exactly balance it or them on the other. This latter is then just the amount you require. It is so convenient a plan that one wonders it is not more universally adopted. (2) Opinions differ; I should say Taylor's or Wray's. (3) None whatever, unless you are using one under circumstances that require a lens of a special focal length—for instance, in making a hand camera. If you don't feel the need of it, you need not trouble. (4) Probably there is too little gold in the "oz." I suppose you mean *solution*; which might be of any strength, or else some of the gold has deposited, or been used too often before. Ordinary water does very well.—**R. A. R. BENNETT.**

**5418. Help Wanted.**—(1) Undoubtedly the most reliable way is to purchase a set of scales. The ingredients of all photographic formulae *must* be weighed or measured if liquids, correctly, should you hope to be successful in your endeavours. No law can be laid down for weighing 2 or 3 gr., because some weigh much more than others. (2) It is a difficult matter to draw the line between one good maker and another. Taylor, Taylor and Hobson, Ross, Beck, Swift, and Dallmeyer perhaps the best known. Ross' "Universal" lens is a capital instrument, if money has not to be considered, or their Rapid Symmetrical lenses, 8 by 5, focus 9 in., price £5 15s. (3) The benefit derived by knowing the focal length is being able to check the diameter of the diaphragms at any given moment. With 1 gr. of gold, instead of 1 oz., the bath is made up correctly. By all means use distilled water. You can purchase it at a chemist's shop. Boil the water, let it cool, then use.—**CYANIN.**

**5418. Help Wanted.**—I believe there are such instruments as fluid grain measures, but I have searched catalogue after catalogue for them, and can find no mention of them. You will be quite near enough if you assume that there are ten minims to one grain. (2) If you require the lens for nothing but landscape work, you cannot do better than get a single achromatic landscape lens by a good maker; focus, about 6 in. (3) The focus of a lens is a very important point in the selection of it, for upon the focus depends (a) the size of the picture, (b) the angle of view included, (c) the depth of definition, and (d) the covering power of a lens. "Watlass" should procure "The Principles of a Photographic Lens Simply Explained" (*gratis*) from Messrs. R. and J. Beck, 68, Cornhill, London, E.C. I am not quite clear as to what "Watlass" means by "1 oz. of gold." It would depend altogether on the strength of his *chloride of gold* solution, which he surely knows. The following bath tones well in many persons' hands:—

|                  |    |    |         |
|------------------|----|----|---------|
| Borax            | .. | .. | 100 gr. |
| Chloride of gold | .. | .. | 1 "     |
| Distilled water  | .. | .. | 20 oz.  |

It is always better to use distilled water, and to use the bath warm. If you wish to use the old bath another time, add 1 gr. of chloride of gold just when about to use it.—**G. P.**

**5418. Help Wanted.**—(1) By making 10 per cent. solutions and then for every grain of the substance required taking ten drops of the ten per cent. solution. (2) For landscape Lancaster's Instantograph lens gives me every satisfaction. (3) For estimating the relative value of the stops. Read the articles for beginners now appearing, by Mr. Hodges. As regards the toning solution, it is almost impossible to say what was the matter without fuller and more precise data. Make up a new bath and try again, taking especial care not to contaminate with hypo.—**THE KID.**

**5421. Ilford Printing-out Paper.**—The toning bath can be used over and over again; when gold is exhausted, add more. It is by no means necessary to



finish the prints on glass. Take them from the washing water and hang them face outwards over a string stretched from one side of the room to the other. Your best plan would be to write to the Britannia Works Company, and ask them for copies of *Photographic Scraps*, in which appear notes on the use of the paper. If they do not help you, I don't know what will.—THE KID.

## EDITORIAL.

**UNSUCCESSFUL.**—Your fault lies in using an ordinary rapidity plate. You must use lantern or slow plates. Both England and Mawson and Swan have introduced commercially special "photo mechanical" plates for copying. The great thing is clear glass lines; get this, and you can get density afterwards by intensifying with Monckhoven's Intensifier. The only fault besides want of density in the print you send is that one corner of the albumack has probably curled up and consequently the lettering is not sharp there.

**W. TOWNEND.**—Many thanks for your note as to the packing of slides, which we shall enquire about.

**REV. J. H. COLE.**—Enter your print again for next competition. That will be the best way; we can find no trace of it.

**T. PATTERSON.**—No criticism of the slides will be published.

**NOVICE.**—You ought to have no difficulty in getting a good hand-camera for the price you name. The question as to fixed focus or adjustable will depend on what you intend to do. We should suggest your calling on us some Monday afternoon to have a chat. The Facile is a quarter-plate camera, price £3 13s. 6d. with single lens, and £5 5s. with R.R. Write to Fallowfield, 140, Charing-Cross Road, for his Facile pamphlet. Probably Pigott, of Cheapside, Wood, Chear's, de, Dollond, Ludgate Hill, all have a stock of hand-cameras on show.

**M. W.**—The products of combustion of magnesium ribbon are merely magnesia or oxide of magnesium, and this is perfectly harmless, but a great nuisance, as it smothers everything with its impalpable powder.

**P. S. D.**—(1) Add a good-sized pinch of carbonate of soda to the gold solution. (2) Dissolve 1 part of chrome alum in 100 parts of water, add solution of ammonia drop by drop till on shaking there is a permanent precipitate or cloudiness, then filter and use. (3) We should try Adams and Co., Aldersgate Street, or Fallowfield, Charing-Cross Road, as the most likely places.

**IGMA (Mentone).**—Please give us some idea as to whether you want magazine, film or dark slides, and we will then write you by post.

**NEVELLE.**—Use the very largest stop you can, and stick to the same plates as you are using now. Give as long exposure as you can for the short poses, and about 10 to 20 sec. for the long poses; use black cloth as a background, and brown paper to stand on. 23 ft. will be quite long enough for your purposes.

**SUNSET.**—(1) No, we do not think it of any use. (2) We prefer A as more satisfactory. (3) Yes, it is a first-class lens and will do good work. (4) The lens is quite rapid enough for instantaneous work. (5) No, we think D preferable. (6) The red label, certainly.

**KENNETH.**—TB's mounting need not be done by the competitor. In developing sea-peices, slow, weak-in-pyro developer should be used. You have been using your gold bath too weak and toning in too strong a light, hence the rosininess.

**P. D. B.**—(1) Any sensitised paper will be suitable for some portraiture, and the obtention of purple blacks is dependent on the negative more than on the paper, but try gelatino-chloride paper, Obermeyer, Aristotype, Celerotype, Ilford, all of which can be obtained from any of our advertisers. (2) Use the bath recommended by the makers of the paper you choose.

**IVAN.**—Many thanks for your kind offer and help to us.

**R. COUTER.**—(1) Probably your lens will not cover a 10 by 8. If it will, it remains to see whether the marginal definition is good enough. If these two conditions are fulfilled, there is no difficulty in your obtaining good results under the conditions named. (2) To make enlarged negatives, first make a transparency by contact printing from the small negative, and then enlarge this on to a slow lantern plate the desired size. (3) Mr. J. R. Gutz, 19, Buckingham Street, or B. J. Edwards and Co., the Grove, Hackney, can supply; the prices differ from 4s. 6d. to 15s. or more.

**F. W. A.**—We are very sorry, but it is simply want of time has prevented us noting your prints.

**NEGATIVE STAIN.**—(1) The yellow ring is undoubtedly "flare" in the negative. Nothing will improve this except very careful doctoring of negative with brush. (2) The film has evidently blistered and filled; you might try washing thoroughly and then stripping the film by the aid of a "Cresco-Pylma" on to a larger sheet of glass. It looks somewhat as though you had used alum bath after hydroquinone developer.

**H. F. LINGING.**—(1) Paraffin wax is soluble in ether, shale naphtha, kerosene, and benzene; this last would be the cheapest and best to use. (2) The yellow stain in your intensified negatives is due to insufficient washing after intensifying; rebleach the negatives and blacken with sodium sulphite after well washing. (4)

The extra rapid plates are five times more rapid than the ordinary. (5) We should think about 5 sec. would suffice.

**H. M.**—We have no paper from your society; if we had we should be pleased to print.

**R. A. R. BENNETT.**—We are sorry that you could not get the paper. Are not your questions rather inquisitorial? At any rate, we cannot reply in public.

**JOHN H. DUMONT.**—Many thanks for magazine, which we note elsewhere. Will you send us also the March number, and we will remit cash for it, or any photographic book to value.

**F. T. BELL.**—We should prefer the 11 in. triple achromatic, and it would be quite equal to B or C, and far superior to the half of our doublet.

**LEWIS LOND.**—Your fixing bath is probably acid. Add  $\frac{1}{2}$  oz. of carbonate of soda to it for prints, and use the acid fixing bath for negatives.

**ENTERKIN.**—(A, 1) We should certainly recommend you to adopt the plan you suggest. (2) They are suitable for films and quite satisfactory. (B) Write to Mawson and Swan, 35, Soho Square, and ask for prices and description of their new Willesden paper film slide, which is very cheap and simple.

**S. P. JACKSON.**—We have had so many answers to question 5428 that we were compelled to withhold some, and amongst them yours, for want of space.

**GEO. PIRIE.**—As soon as we have time to wade through your voluminous communications we will reply, and trust that will be this week.

**A. C. ELLIS.**—(1) We are entirely in the hands of the medal workers and engravers. As soon as we get them you shall have them. (2) There will be no Junior Competition this year.

**PUZZLED ONE.**—Your queries as to stops and shutter cannot possibly be answered without examining both lens and shutter, and therefore we have not inserted them; but obviously the smaller the diaphragm the shorter the exposure with your shutter.

## Sale and Exchange.

**Backgrounds.**—Two backgrounds, interior and exterior, unmounted, 8 by 5, 7s. 6d. the pair; no approval.—Mr. J. Crowther, Dukinfield.

**Cameras, etc.**—Half-plate camera, three double backs, quarter-plate carriers, tripod, Steinheil's R.R. lens, shutter, Laverne's W.A.R. lens; perfect condition; cost £16; offers?—Beaumont, Whitehall Street, Rochdale.

**Cameras, Lenses, etc.**—Lancaster's 1891 extra special quarter-plate camera, combination Rectigraph lens, and double dark slide; nearly new; cost 80s. What offers?—Maltby, St. Paul's Road, West Smithwick.

Half-plate camera, lens, double back, 25s.; bargain.—Harold, Lion Hotel, Wicker, Sheffield.

Shew's quarter-plate Eclipse hand-camera, with 5 by 4 lens, in case, with two finders, two backs; cost £6; price £4; also Lancaster's Instantograph lens, price 13s.—Apply, Amateur, 91, Gracechurch Street, E.C.

Watson's whole-plate camera (out-door), three double slides, best quality, splendid condition, £6; cost £9 15s.; a Ross' quarter portrait lens, 35s.; Colas' quarter portrait, 15s., splendid lens; Ross' whole R. symmetrical, £5 5s.; Newman's instantaneous shutter for same, 20s., cost 32s.—20, Cleveland Terrace, Darlington.

**Hand-Cameras, etc.**—Kodak No. 2, cost £7, quite new, in case, and rolls of films; what offers?—G. F. Lyndon, The Henburys, Moseley, Birmingham.

For sale, a bargain, Perken, Son, and Rayment's seven guinea magazine hand-camera, takes twelve quarter-plates, with rapid Euryscope lens, quite new, price £5 15s.—E. C. P., 21, Caxton Road, Wimbledon.

Frank's Presto camera, very little used, 7s.—G. Fowler, Victoria Road, Darlington.

**Lanterns, etc.**—Mahogany body lantern for oil or lime-light, 4-wick lamp, 4 in. condensers, portrait lens, carrier, perfect, in case, 45s.—Hardcastle, Stonegate, York.

**Lantern Slides.**—Lantern slides of Shetland scenery, including life and character; dozen, 8s; specimen, 8d.—Robert Ramsay, photographer, Lerwick, Shetland.

**Lenses, etc.**—1B Dallmeyer lens, good condition, 55s.; Thornton-Pickard shutter, half-plate.—75, Smedley Road, Manchester.

Whole-plate combination wide-angle Rectigraph, 6½ in. focus, iris diaphragm, Lancaster, practically new, 40s.—Wickison, 52, Lincoln's Inn Fields, London.

Ross' No. 8 Portable Symmetrical, with iris, in leather case, fine condition, £6 10s. cash.—Winter, care of Watson and Sons, 313, High Holborn, W.C.

Half-plate rapid rectilinear lens, cost 70s., price 35s.; whole plate Optimus tripod, three-fold, price 12s.; in good order.—X. Y., 4, Blenheim Crescent, Notting Hill, W.

Optimus R. landscape, 7 by 5, cost 36s., sell 25s.; Optimus R. Euryscope, 7 by 5, cost 84s. 6d., sell £3; Wray's 8½ by 6½ W.A. landscape, cost £3, sell £2; Dallmeyer 2B patent, cost £13 5s., sell £7; pair Grubb's stereo lenses, cost £4, sell £2; Watson's cabinet, cost £3, sell £2; Harrison's N. York c.d.v., cost £3 10s., sell 20s., slightly scratched, others perfect; 6 by 5 R.R. Dallmeyer, cost £5 10s., sell £3 15s.; No. 3 Ross' portable symmetrical (5 in. focus), cost £3 10s.,

sell £2 5s.—H. H. Parby, 99, Mansell Street, Swansea. Underwood's Instanto landscape lens, iris diaphragm, almost new, cheap, 5s. 6d.—J. Buncle, optician, Hope Street, Edinburgh.

**Negatives.**—Pretty girls and women, high-class professional negatives from life; six sent free for 1s. 3d., carefully packed.—Richford, Wells, Norfolk.

**Sets.**—Complete outfit, good as new, the property of a clergyman; quarter-plate camera (Reynolds and Branson), Wray lens, iris diaphragm, Thornton shutter, Watkin's exposure meter, focussing glass, printing frames, dishes, measures, etc.; patent dark-room lamp; price £7, cost double.—No. 239, office of this paper, 1, Creed Lane, E.C.

Whole-plate outfit, consisting of Stanley's whole-plate camera and case, model 1890, three double slides, Thornton-Pickard shutter, 9 by 7 R.P. lens, Swift 8½ by 6½ W.L. lens, Eastman roll-holder, tripod, also developing dishes, quantity lantern half and whole plates.—A., Fuller House, Kettering.

Lancaster's 1891 half-plate Instantograph camera, dark slide, tripod, and R.R. lens, good as new, only 67s. 6d.—53, Slad Road, Stroud.

Marion's half-plate camera, two double dark slides, lens, tripod, and case, complete, 40s.—Oswald, 18, Pitt Street, Norwich.

Camera, 7½ by 5, by McKellen, three double backs, rectilinear lens, tripod, and case, complete; in perfect condition; cost £16 10s.; price £9 13s.; also 10 ft. lantern screen on rollers, price 37s. 6d., cost 45s.—Cave, chemist, Southampton.

Quarter Lancaster's Instantograph, complete, three double backs, oak sliding tripod, and case.—No. 240, office of this paper, 1, Creed Lane, E.C.

**Sundries.**—AMATEUR PHOTOGRAPHER, first ten volumes, complete, bound, price £2.—Rector, Elm, Frome.

Watson's Cyclist Stand, quite new, cost £1 15s., will take 13s. 6d. cash.—Cooper, 57B, Hubert's Grove, Stockwell, London.

Lancaster's enlarging lantern, 5 in. condensers, 47s. 6d.; 8 in. burnisher, 9s. 6d.; large print-washing machine, 10s. 6d., cost 25s.—M. Newhouse, 90, Victoria Terrace, Lancaster.

Two volumes Chambers' "Cyclopedia of English Literature," comprising 34 numbers, three missing, 8s. 6d.; or exchange; bargain.—Turner, 3, Paradise Row, Barboume, Worcester.

Roll-holder, 5 by 4, Eastman's, latest pattern, perfect condition.—Tytler, 8, Grosvenor Street, Edinburgh.

Cushion tyre, diamond frame, ball head Safety; latest improvements; unsoiled; £7 15s.; worth double; approval.—7, Dereham Road, Norwich.

22 annuals, English and American, 11 bound; two vols. "Camera;" "Photography," No. 19 up to date; price £1.—H. Rendell, Bishops Nympton, South Molton.

Chronic acid battery, four cells, in case, lifting arrangement, 6-candle lamp, suit dark-room; exchange half Instantograph, slides, lens, background, or sell.—116, King Street, Southsea.

224 numbers AMATEUR PHOTOGRAPHER, clean as new; exchange anything useful.—Hinckley, Teddington.

For sale, portable dark-tent capable of developing whole-plates, £2, or offers.—Ridley, 35, Amptill Street, Bedford.

## WANTED.

**Cameras, etc.**—Camera, whole-plate, swing-back, without lens or stand; must be good and cheap.—Tytler, 8, Grosvenor Street, Edinburgh.

Wanted, whole-plate camera (without lens), long extension, tripod, slides, etc.—G. Rhodes, 19, Parliament Row, Hanley, Staffordshire.

**Cameras Lenses, etc.**—Half-plate camera and lens, or R.R. lens; exchange modern horizontal slide-valve engine and cash. H. Gandy, 4, Baron's Court Terrace, W. Kensington.

**Hand-Cameras, etc.**—Wanted, No. 3 Kodak Junior, cheap.—E. Phillips, Bridge Street, Leatherhead.

Wanted, a magazine hand-camera.—P. Martin, 9, Alwali Road, Wandsworth, S.W.

**Lantern Slides, etc.**—Wanted, photographs and lantern slides of Calais and Boulogne. Lowest price to Fred Reader, 173, Hemingford Road, Barnsbury, N.

**Lenses, etc.**—Wanted, whole-plate portrait lens; price; approval.—Stewart, 84, Norfolk Street, Glasgow.

**Sets.**—Wanted, half or whole photographic set; exchange safety.—7, Dereham Road, Norwich.

**Stereoscopic Apparatus**—second-hand stereoscopic camera and backs; suitable exchange, or cash.—Nall, 8, Chelsea Road, Aintree.

Wanted, stereoscopic half or whole plate set; state full particulars and terms.—Midland, office of this paper, 1, Creed Lane.

Wanted, Chadwick's stereoscopic outfit, perfect.—The Rev. Walter Marshall, Cloisters, Windsor Castle.

**Sundries**—*Photographic Reporter* for December; state lowest prices to Ambler, Rivers Leigh, Silsden, Yorks.

Wanted, whole-plate camera, case, printing frames; cash; approval.—P., 46, Green Street, S. Shields.

Wanted, 10 to 20 ft. oxygen cylinder, modern construction, in perfect order; state lowest price.—Mumery, The Ferns, Pellatt Grove, Wood Green, London, N.



# The AMATEUR PHOTOGRAPHER

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Office: 1, Creed Lane, Ludgate Hill, London, E.C.

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FRIDAY, FEBRUARY 19, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

*The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.*

**OUR VIEWS.**—Ill-luck and Photography—The New Council of the P. S. G. B.—The Automatic Photographic Company—The Free Portrait Dodge—Amalgamation of Societies—Winner of Bronze Medal—A large Sun Spot Visible—City of London College Phot. Soc.—Preston Camera Club—Postal Club Vacancy—Taylor, Taylor and Hobson's Prizes.

**LEADER.**—The Photographic Institute.

**LETTERS.**—American Photographic Notes (Fretwell)—Enlarging (A. B.)—Bromide Paper (S. P. J.)—The Actinograph (S. E. K.)—West London Photographic Society (Bennett, Miller)—The Rapidity of the Single Lens (J. A. Hodges)—How to Keep Ferrous Oxalate (J. Harriman)—The Exchange Postal Club (G. F. G. Grant).

**ARTICLES.**—Photographic Procedure (Wall)—Elementary Photography (J. A. Hodges)—Platinum Toning Gelatino-Chloride Paper (J. Brown)—Enlarging Factors Simplified (A. S.)—Composition, and Light and Shade (H. P. Robinson)—Instantaneous Photography (W. J. Harrison)—The Lantern, and How to Use It (C. G. Norton).

**QUARTERLY EXAMINATION IN PHOTOGRAPHY.**

**REVIEWS.**—Guide Pratique pour l'emploi des Surfaces Orthochromatiques (Mathet)—Modern Photography (Burton)—Ilford Manual of Photography (Bothamley).

**APPARATUS.**

**EXHIBITION.**—Malta—Manchester Amateur Photographic Society.

**SOCIETIES' MEETINGS.**—Brighton—Bristol—Camera Club—Chester—Cornish Camera—Coventry—Crewe—Derby—Douglas—East London—Fairfield—Faversham—Guildford—Hackney—Holborn—Huddersfield—Ipswich—Kendal—Lantern—Leicester—Manchester—Munster—Phot. Soc., Ireland—Preston—Richmond Putney—Stockton—Louth—Tunbridge—Ulster—Wakefield—W. London—Wolverhampton.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All Communications should reach the Editor by Tuesday.)

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (SALE AND EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.)

**"Amateur Photographer" Monthly Competition No. 33.**—*"SEA PIECES OR RIVER SCENERY."* Latest day, February 22nd. —Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, March 11th.)

PHOTOGRAPHY is credited with a good many ills and disadvantages, but perhaps the following, which appears in a local daily paper, is the climax. It is headed "Ill-luck and Photography":—

"Once when in the North of England I was photographed with a young lady, to whom I was then engaged to be married, and I was told I had done a most unlucky thing, and that the engagement would soon be 'off.' It was soon 'off.' Since then whenever I hear of the rupture of a marriage engagement, or of the death of one of an engaged pair, I ask, 'Were they photographed together?' and usually find that they were. I see by a picture in a weekly illustrated paper that the Duke of Clarence was photographed with the Princess May after the engagement. I would like to inquire if any of your readers have ever heard of this particular superstition."

This is quite on a par with the old superstition that an owl is an unlucky stone, and seeing the new moon through glass, etc. Possibly one explanation of the still current belief in such superstitions is that one hears of the cases which support the idea, but not those which are against it.

At a general meeting of the P. S. G. B., Mr. James Glaisher, F.R.S., resigned the Presidency, and Captain Abney was elected in his stead, but only accepted the post by persuasion of the retiring President. It is interesting to note that out of a muster roll of 433 members only 144 took the trouble to vote on the election of the Council, and the following is the newly-elected Council for the ensuing year:—President, Capt. W. de W. Abney, C.B., D.C.L., F.R.S.; Vice-Presidents, T. Sebastian Davis, F.C.S., James Glaisher, F.R.S., F.R.A.S., John Spiller, F.C.S., F.I.C., and Sir H. T. Wood, M.A.; Hon. Treasurer, G. Scamell; Council, W. Ackland, G. L. Addenbrooke, W. Bedford, W. S. Bird, A. Cowan, T. R. Dallmeyer, W. E. Debenham, W. England, J. Gale, F. Hollyer, F. Ince, Dr G. L. Johnson, H. Chapman Jones, F.I.C., F.C.S., A. Mackie, Capt. A. M. Mantell, R.E., A. Pringle, J. W. Swan, M.A., F.I.C., F.C.S., Professor J. M. Thomson, F.I.C., F.C.S., J. Traill Taylor, and L. Warnerke. It will be noted that Mr. W. S. Bird retires from the Treasurership.

THE Automatic Photographic Company, which has long been in trouble, is now passing through the Bankruptcy Court. Hardly any of our readers, we suppose, ever imagined that it would pay, and from the published proceedings in bankruptcy it does not seem as though all concerned will come out with clean hands, though probably many will do so with empty ones. It seems almost incredible that anyone can believe that such a delicate operation as the preparation of a negative by the wet-plate process could ever be done by a series of wheels and levers, actuated by clockwork.



WITH reference to our note of last week as to the free portrait dodge, one correspondent states "that I am sorry to say I am a victim of one of these photographic companies, and I can get back neither photograph nor anything else." We are very sorry for our friend, and can only suggest that he should immediately place the matter in the hands of the chief constable of the town whence the Company issue their circular, although we are afraid not much can now be done, as we are under the impression that the so-called Portrait Association has decamped.

WE publish this week two letters, one from the Secretary of the West London Photographic Society, and the other from the Secretary of the Chiswick Camera Club, both drawing attention to their respective societies. We should like to suggest to the members that there is now a very good chance of amalgamating and forming one powerful and useful society. We have, as is well known, long set our faces against the multiplication of photographic societies in the same place or neighbourhood. One large society can do more good work than half-a-dozen little ones, and if the leaders of a society are wise, they will cater both for the advanced and the elementary student.

THE competitor who won the bronze medal in our last competition writes, enclosing a duplicate entry form, that he supposes the original sent with the print was lost or mislaid. The particulars are as follows: J. Gale (Wolverhampton), "Evening," taken with Optimus R. R. f/32, 28 sec. exposure in August at 6 p.m., on Mawson's Castle plate, printed on rough drawing paper, home-sensitised with ammonia-nitrate of silver. "The print was made after waiting some months for the kind of cloud effect necessary to relieve what would otherwise have been a bare photograph."

A CORRESPONDENT kindly informed us on Saturday by telegram that there was a large sun spot visible. We were unable, however, to do anything in the shape of photographing it. In a subsequent letter dated the 15th, our informant writes, "It was visible to-day not far from the right edge of the sun. It must be travelling much faster than usual, the time generally taken to travel right across being twelve days. This time the journey would be completed in about eight days. It was only visible on three days in consequence of the clouds which obscured the view." Did any of our readers note this, or anyone obtain a negative of it?

MR. WALTER BLIZARD requests us to announce that a preliminary meeting will be held at the City of London College, White Street, Moorfields (about two minutes' walk from Moorgate Street Station), on Wednesday, the 24th inst., at 7 p.m., to promote the formation of a photographic society in connection with the College, to which anyone interested in the formation of the society is invited to attend.

THE Preston Camera Club intend to finish the first year of their existence by an exhibition of members' work, with lantern evenings on March 1st, 2nd, and 3rd.

MR. J. T. COOK, of Edina, Stoneygate, Leicester, asks us to say that he will be glad to fill up some vacancies in a photographic postal club of which he is secretary, and will be glad to hear from anyone desirous of joining.

As will be seen from our advertisement columns, Messrs. Taylor, Taylor, and Hobson are making a handsome offer of prizes for the best negatives taken with one of their lenses.

## THE PHOTOGRAPHIC INSTITUTE.

IN continuation of the article in our last issue on "Photography as a Branch of Technology," we present the following considerations for our readers.

IN the discussion which followed the reading of Professor Meldola's paper, each speaker, as we have already noted, sketched the advantages of living abroad and the disadvantages of living in England from the particular standpoint of a Photographic Institute. We print in full Mr. H. M. Elder's remarks as well worth perusal:—

MR. H. M. ELDER said he had had the great advantage of talking over with his friend, Professor Meldola, the subject of his lecture during almost the whole of the time that it was in preparation; consequently he might say that he was to a certain extent in the Professor's confidence in the matter. He (Mr. Elder) most fully agreed with the suggestions put forward in the lecture. When he first heard of the affiliation scheme proposed by the Photographic Society of Great Britain—of which Society he had not the honour of being a member, but for which, none the less, he had a very high respect—it seemed to him that the Council of the Society were taking a step in the right direction, a step that would enable them to do a work in this country as great as any work that had ever been done by any similar body in this country. It was a truism to say that we were lamentably behindhand in our schemes for technical instruction. Thanks to Professor Meldola—he mentioned him first, as he was the lecturer of the evening—Professor Ayrton, Professor Perry, Professor Unwin, and many others, there was one scheme of technical education that was going on in a very admirable manner; he referred to the City and Guilds of London Technical Institute; and it seemed to him one of the greatest advantages in the way the scheme was carried out was the fact that cramming was unknown. The examinations, such as they were, were carried out by the internal staff of the Institute, not necessarily by the teachers themselves, but they were conducted by men who knew what the students really wanted, and not by mere scholastical or academical pedagogues. Professor Meldola's lecture divided itself into two parts, of which, perhaps, the first part was to the speaker the most interesting, but the second part was to them all the most valuable. The first part was the enumeration of the various applications of photography, and the second part could make some suggestions for some start in photographic technology. He must be understood to speak for himself to a very large extent, although he believed anything he might say would be, at all events, directed towards the same ends as Professor Meldola's views. He had discussed the subject very frequently with the Professor, and was, perhaps, to a certain extent, more conversant than many people with his ideas, and he thought that the present was the time for the P. S. G. B. to take a step which would be a lasting benefit to the country. Professor Meldola had suggested that they should call some sort of a convention, that they should summon well known photographic bodies to send delegates—delegates whom the speaker hoped would be carefully chosen—and that they should discuss what could be done. The lecturer then went on to make a suggestion for missionary work. It was perfectly true, as Professor Meldola had said, that in this country it was an absolute impossibility to start any scheme without first showing it to be a success. Large sums of money were now being devoted to purposes of technical education, but he (Mr. Elder) was afraid he would hardly be accused of being too severe if he said that these large sums were being absolutely frittered away. He might call the attention of the P. S. G. B. to a note in that day's *Times* with regard to the scheme of technical education in Berkshire. There it was carried out by well-meaning but ignorant County Councillors, who did not know education from a kitchen poker. They thought that any national schoolmaster, for instance, was good enough to teach any subject. He had heard a well-known—he would not say teacher, but a well-known crammer—say that if anyone would give him twenty-four hours' start he would teach anybody anything. That man, no doubt, would cram anybody with anything, but Mr. Elder maintained that it would not be teaching. They must get the very best men, as Professor Meldola said, and they must pay the best salaries. It was no use stinting the money—that was where the County Councils failed; it was absolutely impossible to have a thing done well unless a proper price was paid. Very well, then; they must get the best men, experts in different branches of the subject; they must pay them what they asked, and they must put the thing into their hands; and if they took Professor Meldola's suggestion—and he thought they could not do better—they must start missionary work, somewhat similar, but he hoped better managed, than the University Extension Scheme, and they must try and show some reason why the City companies and the Government and other people who had large funds at their disposal should help them. If they could



show reasons why they should be helped, money would be forth coming to any extent; and they might, if the P. S. G. B. really set itself to the labour, they might, in possibly five years, possibly ten years, be able to show a photo-technical institute in Great Britain which should be as magnificent as those in Berlin and Vienna; and he was sure that was a consummation which everybody present would be glad to see realised. There was one point on which he knew Professor Meldola felt strongly, and which was brought out in the lecture, and that was the emphasis on the fact that the business of a photo-technical institute was not elementary scientific teaching. Elementary scientific teaching was necessary valuable, but there were plenty of schools that did it, and did it exceedingly well. What was required was not the turning out of a large number of fairly good operatives, but the turning out of a small number of thoroughly qualified and able men. A firm in business in Vienna or Berlin could go to the director of the technical institute and say, "I want a man who shall be thoroughly capable and able to do so and so," and the director would put him in communication with such a man, and he would get what he wanted. Suppose such a firm as Waterlow and Sons, or Annan and Swan, or any of the other great photographic firms in England—he said nothing of the best photographers—required a man to do high-class work for them, what did they do? He knew that in one case, at all events, they were compelled to go to Germany for their men. It seemed to him that was a national disgrace; and he was sure he had the sympathy of the meeting when he said that through the apathy and ignorance of the English manufacturers and their contempt—he was afraid there was no other word for it—for pure science, this national disgrace had been brought about, that many of the best scientific manufactures had gone almost entirely over to the Continent.

The first question to consider is then: Is the Photographic Society of Great Britain strong enough to found such an Institute as is wanted? The full strength of the parent society is 433 members, but as is stated in the Treasurer's report—

"The active influence of scarcely 200 can be traced, including in this figure all who have contributed pictures to the exhibition; so that to the steadfast pecuniary support of a passive majority we owe hearty thanks. This majority contains names eminent in the world of science, and is doubtless composed mainly of gentlemen who appreciate the charm of photographic work, and the ever-increasing importance of its applications; who receive their copy of the Journal, come with their friends to our exhibitions, who note the activity of our leading members, and gladly assist our resources with an annual guinea."

Even allowing the Society to have a full muster-roll of active members, is this strong enough either in influence, money, or fully qualified technological teachers to carry out the formation of the proposed Institute? In influence they may be strong; probably the small leaven of "this majority of names eminent in the world of science" would be strong enough to do what is required.

As to the strength in money, probably we ought not to inquire, but as the Treasurer's report will be printed, and then become public property, we will quote one passage:—

"The Council before venturing on our present liabilities called for a Guarantee Fund of £200 a year for three years. There followed a prompt and cordial response from seventy-six members to the amount of £155."

The italics are ours, and we would particularly note that seventy-six members only out of 400 odd, or one in every six members, could or would guarantee any help, and the sum fell short by nearly £50 of that asked for. Turning to the actual accounts, we quote once again from the Treasurer's report:—

"My concluding remark is simply to point out that the net result of the year's finance (disregarding for the moment the Guarantee Fund) shows a diminution of the capital of the Society by £129."

Now, we ask, is this healthy looking, and with such a state of things is it possible to incur additional expense in trying to found an Institute?

The special plan suggested is to call a meeting of representatives of the Camera Club, the Photographic Convention of the United Kingdom, and of the numerous photographic societies of the metropolis. Well, unfortunately, offence has been given to many prominent

men, and personal feeling, personal aggrandisement, and bickerings must be dropped, and one and all must unite in furthering the plan, which is that "a few first-class specialists were enlisted and authorised to give short courses of demonstrations to those affiliated societies, or in those centres which desired to receive such instruction." We strongly object to this; this is not, in our opinion, the method to pursue. Scattered instruction is not the way to found an Institute. Let a school be founded with good practical men, scientists and specialists, at the head, and start with low fees for instruction, giving rewards to the best students, hold out promises of employment, either as teachers or as experts, and we think it may possibly be within the bounds of reason to expect good and solid support from societies and individual workers.

Supposing we start a band of specialists to teach and talk. If we are to judge from the Photographic Society of Great Britain itself, is this to be a success. Take, for instance, Mr. Chapman Jones' lecture "On Distortion of Outline in Photography." We believe there was an audience of twelve—only twelve to hear a man of this standing—and even Prof. Meldola could not draw more than twenty-four. Taking the average run of amateurs, and we speak from possibly a far better knowledge than any speaker at the Photographic Society of Great Britain meeting, how many of them are capable of receiving the necessary lectures? and many have neither the time nor opportunities of going further than turning out a decent print. Unfortunately, bread and cheese, or its equivalent, money, must be obtained, and this is to all of us, or, perhaps, we should say, to many of us, the first consideration. We are willing to let the general good run to ruin in the awful scurry and scramble for this world's goods, and it is easy for a man in possession of a practical sinecure to talk of giving up time, money, and labour with but small prospect of reward, but infinitely harder to do it.

The individual worker can do much; he can support or force the Committee of his Society to provide, preliminary instruction, which shall form the basis of a series of advanced lectures, and he can also, by personal attendance at meetings, when "dry-as-dust" but somewhat advanced papers are read, support and encourage the lecturer to work on in the proposed course. He can also, by a small subscription, become a member of a central body which shall be the embryo Institute, which central body shall give him in return certain advantages in return for his money, which will prove to him that the plan is worth support. Speaking from a wide experience, we state that the time is not yet ripe for Prof. Meldola's specialist lecturers. Let us lay the foundation first, and then raise the superstructure.

In penning these notes we have entirely, as far as lies in our power, avoided fault-finding, and we have no wish to throw a wet blanket on the Photographic Society of Great Britain's scheme; only we do not agree with it, and have honestly stated so to the best of our abilities.



**Liverpool Camera Club.**—In the City Hall, Eberle Street, on the evening of Monday, February 8th, the members of the Liverpool Camera Club held their first annual "grotesque dress ball." The costumes presented the greatest variety of comical and artistic devices, and much ingenuity was apparent on the part of the artists of the innumerable "make-ups." Amongst them may be mentioned:—Dr. Cecil F. Webb, President, as "Cavalier of Charles II.;" Miss Webb and Miss L. Webb, as "Watteau Shepherdess and Gipsy;" Mr. J. Smith, Ball Secretary, as "Sherwood, from 'Dorothy';" Miss Smith as "Bo Peep;" Mr. W. Tansley, Hon. Secretary, as "Handy Andy;" Mrs. Tansley as "Night;" Master W. Tansley as "Little Lord Fauntleroy," etc. During the evening several flash-light photographs of the ball-room were taken by Mr. James Smith, the Ball Secretary, which will prove interesting souvenirs of the evening's festivities.



## Letters to the Editor.

### AMERICAN PHOTOGRAPHIC NOTES.

SIR,—Some weeks ago I had occasion to mention in a letter published in your columns the prostitution of photo-mechanical methods by American publishers for purposes of literary theft. One of the most remarkable instances of this is the publication of a photographic reprint of that splendid British work, the "Encyclopedia Britannica," in this country for the small sum of 30 dols. A new copy was offered to me yesterday in Boston for 20 dols., and it appeared to me to contain all the letterpress of the original British edition, the page being slightly reduced in size in the process of photographing—and had a special American supplement.

Another edition—Peale's—is sold in Boston for 36 dols.—and omits those articles which, being written by Americans, are copyrighted in the United States—and the publishers of the *Boston Herald* advertise that they will sell to their annual subscribers for the sum of 20 dols (say £4 3s. 4d.) what they call an Americanised "Encyclopedia Britannica." As an Englishman I should be loth to insult the Americans by applying their name to a book which is at once an infamous piracy and a fraud upon the purchaser, for, as you will see from the enclosed circular issued by

Adams Company of New York for 1.50 dols., or about 6s. 2d., so that the American buyer gets an inferior article for a much higher price, while such cheap and excellent little manuals as, to mention only one among many, Leaper's "Experimental Photography," a reprint from your columns, cannot be obtained at all except by importation from England.

I notice frequently in your "Queries" columns enquiries as to the examination of sensitive plates by Custom House officers in the United States and Canada. Of course, they are liable to duty. I had, for instance, to pay 60 per cent. on the plates which I bought in England, and if it were once the habit of the Custom House officers to let photographic plates or cameras pass without examination they would soon become convenient receptacles for smuggling diamonds and other articles of great value and small bulk. I have heard, for instance, of a Yankee girl importing diamonds in the hollows of her decayed teeth. But I have always found the Custom House officers of Canada and the United States, to say the least, quite as courteous as those of Great Britain.

The Eastman Company seem determined to maintain the lead as manufacturers of portable cameras for the traveller. They have now brought out a line of hand-cameras, beginning as low as 6 dols., and have arranged them so that the film roll can be inserted in full daylight. One for 4 by 5 in. negative, costing 15 dols., or £3 2s. 6d., gives very sharp instantaneous pictures, full of detail, in the bright clear atmosphere of Rhode Island. For English skies, if I may judge by my December visit to Yorkshire and Lancashire, it may be a different matter.

The Bausch and Lomb Optical Company of Rochester, New York, have adopted a pretty expensive mode of advertising. They sent a circular to the chief camera clubs of the United States, offering to give to each club a R. R. lens to cover a 6½ by 8½ plate, to be given as a prize to the member who should make the best views with that lens. In addition to this they offered several money prizes. I am glad to say that my fellow-townsmen of the Providence Camera Club have secured the first prize of 200 dols. for the highest general average, and a member of this club, Mr. Howe, obtained a prize of 125 dols. because his negatives took the second place in merit among the 850 negatives sent in from all parts of America, and also received the lens for the best of the negatives sent in by our club.

Last week at the Society of Arts, in Boston, I heard an interesting lecture on "Photo-Mechanical Processes," by Mr. Koehler, curator of the Print Department of the Museum of Fine Arts in Boston. This museum has an admirable exhibit illustrating the technical methods of reproduction from the fifteenth century to the present time, which, with its catalogue *raisonné*, is better than any similar exhibit that I have seen here or in Europe.

Your editorial remark on page 18, that "subject" competitions have been a failure in England is equally applicable to America. Some of the very best American work of this kind was at the International Photographic Exhibition in Leeds, yet to every lover of art it must have been evident that photographs from the works of modern painters, illustrating the same subjects, would be far superior to those from the human models. Take for an instance those of Lancelot and Enid, by an American lady. Doubtless, if Lancelot and Enid ever existed at all, these two Ancient Britons, in their clothing of blue-dye, may have been less pleasing in appearance than Miss C. W. Barnes's Yankee model; but as it is the idealisation of human life that we enjoy in Tennyson's "Idylls of the King," so it is an idealisation of the human form, and at least some expression in the face, that we seek in the pictorial illustration to the poem. Even the photographs of actors, trained as they are for the mimic art, are almost always disappointing from an artistic point of view, no matter how good may be the technical work.

I have been trying another plan which seems to be likely to be more useful for popular education in connection with the optical lantern. I wanted some slides to illustrate that pretty German myth of the middle ages which is imperfectly known in England through Robert Browning's "Pied Piper of Hamelin." I saw various lantern slide sets in England and from 6s. to 21s. the dozen, but all failed to give the spirit of the piece. So I obtained German photographs of Hamelin and of Thorczko, and copies of paintings by German artists illustrating the legend, and in this way have a much more satisfactory set of illustrations than any which are on sale in the trade. What set of photographs of groups of modern people dressed up as *tableaux*

2

A—AAR

Consequently, the farther we trace back the history of language, the more instances of the vowel do we find the more nearly, if not entirely, does it become the one starting point from which all vowel-sounds are derived.

It is principally to the effort required to keep this sound pure that we must attribute the great corruption of it in all languages, and in none more than our own. Indeed, in English, the short sound is never heard pure, it is heard in Swedish, e.g., in *man*, which is quite different from the same word on English lips. We have it, however, long in *father*, &c., though it is not common. It has passed into a great many other sounds, all of which are denoted in a few collating ways by the original symbol, and some by other symbols as well.

The symbol *a*, which is the most common, is the symbol of the vowel *a*, as in *father*, &c. It is also the symbol of the vowel *ä*, as in *father*, &c. It is also the symbol of the vowel *å*, as in *father*, &c. It is also the symbol of the vowel *o*, as in *father*, &c. It is also the symbol of the vowel *u*, as in *father*, &c. It is also the symbol of the vowel *i*, as in *father*, &c. It is also the symbol of the vowel *e*, as in *father*, &c. It is also the symbol of the vowel *ö*, as in *father*, &c. It is also the symbol of the vowel *ü*, as in *father*, &c. It is also the symbol of the vowel *ä*, as in *father*, &c. It is also the symbol of the vowel *å*, as in *father*, &c. It is also the symbol of the vowel *o*, as in *father*, &c. It is also the symbol of the vowel *u*, as in *father*, &c. It is also the symbol of the vowel *i*, as in *father*, &c. It is also the symbol of the vowel *e*, as in *father*, &c. It is also the symbol of the vowel *ö*, as in *father*, &c. 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*vivants* to illustrate the plays of Shakespeare, for instance, would at all equal those copied from the work of Kaulbach's pencil?—  
Providence, R.I., United States, Yours truly,  
January 21st, 1892. JOHN FRETWELL.

\*\*\*  
ENLARGING.

SIR,—In the articles on "Enlarging" which appeared in your last two issues, there are several points which are not very clearly explained, viz.:—

(1) What arrangement are you to have for focussing the picture? (2) What kind of lens is preferable, and what stops (if any) should be used, in enlarging? (3) How to make the exposure, whether by uncapping lens or uncovering negative to be enlarged?

If you can have these points explained through the medium of your valuable paper, you will much oblige—Yours truly, A. B.

\*\*\*  
BROMIDE PAPER.

SIR,—In view of the frequent inquiries that appear in your columns as to the difficulty of determining in the dark-room the right and the wrong side of bromide paper, perhaps I may venture to suggest that this difficulty would be removed if the makers would put a small mark of some kind in the corner of each sheet of paper denoting the right or the wrong side. I am aware that there is a tendency in the paper to curl up slightly on the sensitised side; that it is glossier and more adhesive to the moistened figure on this side; but, in spite of all these tests, I have occasionally made a mistake.—Yours, etc., S. P. J.

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THE ACTINOGRAPH.

SIR,—W. L. Noverre, in your last issue, expresses some doubt about the value of the actinograph in determining the exposure in certain cases. As in all photographic work absolute certainty cannot always be arrived at, yet we know, on the other hand, of the most absurd exposures given by rule of thumb. As I happen to have one of these instruments before me, allow me to say I am perfectly charmed and astonished at its simplicity. And I have used the instrument experimentally, and it carries out what the inventors claim for it. Perhaps your correspondent is unaware there is a printed table of factors dealing with views, portraits, interiors, etc., and that there is a revolving barrel which carries "iso-actinic" lines, which come against the sliding scale, and thus give the value of the light for every hour of the day throughout the year. Besides, I have been amusing and instructing myself by comparing the actinograph readings with some of the exposures given to your Monthly Competition pictures published last week. Allow me to run away from the main question to say that I regret to see in many cases either the time of the year, the hour of the day, or the condition of light was absent, which was enough to make those particulars you did give quite valueless as a guide to others.

I also notice the variations in the exposure are very marked, and in the comments of the Editor one comes across "under-exposed," "fearfully over-exposed," and so forth. For instance, on page 126 is an exposure with  $f/32$ , 3 p.m., July, of 1 sec., with an instantaneous plate, and next to it at 7.30 p.m., with the same stop and in the same month, and assuming the speed of the plate to be ordinary, only one second was given. Now, according to the actinograph so late as 7.30 with  $f/32$ , three or four seconds is the least that should have been given. Trusting these few remarks may lead others to try the instrument, I am, yours truly, Reading, S. E. K.

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WEST LONDON PHOTOGRAPHIC SOCIETY.

SIR,—The Council of the West London Photographic Society desire to call the attention of photographers residing in the West of London, particularly Chiswick and Gunnersbury, to the fact that the head-quarters of the Society have been moved to Chiswick School of Arts and Crafts, in Bath Road, Bedford Park, one minute's walk of Turnham Green Station, and they hope to have a considerable accession of members from that district. They have arranged to hold frequent meetings of a social character, in addition to the ordinary meetings, when papers are read, etc., and considering that the Society is now so well known, they think that many ladies and gentlemen would like to join it now that it has moved to Chiswick.

Any information as to the Society will be gladly furnished by, yours faithfully,  
LIONEL C. BENNETT (Hon. Sec.)  
30, Blandford Road, Bedford Park, Chiswick.

SIR,—In reference to your report of the removal of the West London Photographic Society from Hammersmith to Bedford Park, I beg to inform you that a society already exists in that neighbourhood, viz., the Chiswick Camera Club, all particulars of which may be obtained from—Your obedient servant,  
H. HARDING MILLER (Hon. Sec.)

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THE RAPIDITY OF THE SINGLE LENS.

SIR,—I notice in your last issue a letter from Mr. Nunns, taking exception to my advising a beginner to purchase a rapid rectilinear in preference to a single lens, and for his benefit, and also for that of your less experienced readers, I should like to be allowed to state my reasons for having given that advice. The chapters on "Elementary Photography" have been written for the assistance of those who are altogether unacquainted with the technique of the art, and in writing upon "The Lens," I endeavoured to treat the subject solely from a practical point of view, giving only such information as would be of practical assistance to the class of readers whom I was addressing.

It is perfectly true (nor had I overlooked the fact, as Mr. Nunns suggests) that single lenses working at  $f/8$  are obtainable, but the results when working at that aperture are not comparable with those produced by a rapid rectilinear working at the same ratio aperture. There is so much spherical aberration present in the image formed by a single lens when working at this large aperture as to render it of little value for general purposes; indeed, even at  $f/11$  its performance is not so good as that of a rapid rectilinear at  $f/8$ , and it is not until it has been stopped down to something like  $f/15$  that the image becomes sharply defined and the field flat. This is due to the fact that the single lens is non-aplanatic, and is therefore incapable of giving a sharply defined image without the employment of a diaphragm, whereas the rapid rectilinear is aplanatic and gives a sharply defined image and a flat field without a diaphragm. But let Mr. Nunns test my assertions by making a practical test of the relative capabilities of the two lenses, by copying one of the advertisement pages of the AMATEUR PHOTOGRAPHER first with a single lens, and then with a rapid rectilinear, each working at  $f/8$ . He will find that in the first case only a very small portion of the centre of the page will be at all sharp, the rest being fuzzy and indistinct, while the rapid lens will reproduce every letter down to the margin of the page. The same result will happen if he attempts to photograph a group. Indeed, several manufacturers have ceased to supply single lenses working at this aperture unless specially ordered. The expression "many times more rapid" is certainly rather a loose one, but in making the comparison I was assuming the single lens to be working at its largest effective aperture, which for practical purposes, and for the reasons I have stated, must be taken to be about  $f/15$ . Therefore, bearing in mind the fact that exposure varies as the square of the distance, a lens working at  $f/16$  requiring four times the exposure of one working at  $f/8$ , my statement was not so greatly exaggerated. In regard to brilliance, theoretically, no doubt, a picture produced by a single lens should be more brilliant than one taken with a doublet, but an everyday experience with many lenses of both classes extending over the last sixteen years convinces me that the difference is only a theoretical, and not a practical one. In regard to cheapness, that, of course, is a comparative term, but taking the lens of Swift and Son, to which Mr. Nunns refers, I find that the half-plate rapid lens costs only a few shillings more than the 9-inch single lens which he recommends. I do not wish it to be inferred from the foregoing remarks that I seek to under-rate the advantages of the single lens; for pure landscape and for certain special work, it is probably unsurpassed, but having made that concession, I must be allowed to insist upon the accuracy of my former statement, that the rapid rectilinear is the best lens for a beginner.—Yours very truly,  
JOHN A. HODGES.

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HOW TO KEEP FERROUS OXALATE DEVELOPER.

SIR,—From time to time I have been glad of "tips" from my confreres, and to extract "wrinkles" from your paper.

My experience as an amateur extends over a long period, and in the days of collodion and wet-plates it goes without saying that I had considerable acquaintance with the iron developer. Quite recently I have taken up bromide paper, and renewed that acquaintance. Now everyone knows how soon a solution of iron deteriorates in a partly filled bottle. This is the point. Keep your bottles full; and to insure this I adopt the method of dis-



tributing a large quantity into smaller receptacles. Say, I make up 20 oz. of iron solution; I put this into *nineteen* one-ounce phials, and cork *tightly*. By doing this I ensure a non-oxidised iron when mixing with the oxalate. There may be nothing new in this; but I know some people use discoloured iron to the detriment of their prints.—Yours truly,  
J. HARRIMAN.

\* \* \* \*

### THE "EXCHANGE" POSTAL NEGATIVE CLUB.

SIR,—There are one or two vacancies in the above club, which we are desirous of filling with new members, from either Scotland, Ireland, or North England. The club is for quarter-plates only. Should any of your readers like to join, I shall be very pleased to answer all enquiries.—Yours faithfully,

The Tower House, Bexley Heath. G. F. GREGOR GRANT.

## Photographic Procedure.

By E. J. WALL.

Author of the "Dictionary of Photography."

### SECTION IV.

#### THE DARK-ROOM (*continued*).

THE following tables, culled from various writers, may also be useful:—

#### THE CONVERSION OF FRENCH (METRIC) INTO ENGLISH MEASURE.

|                       |                                         |
|-----------------------|-----------------------------------------|
| 1 cubic centimetre =  | 17 minims.                              |
| 2 cubic centimetres = | 34 "                                    |
| 3 "                   | 51 "                                    |
| 4 "                   | 68 " or 1 dram. 8 minims.               |
| 5 "                   | 85 " " 1 " 25 "                         |
| 6 "                   | 101 " " 1 " 41 "                        |
| 7 "                   | 118 " " 1 " 58 "                        |
| 8 "                   | 135 " " 2 " 15 "                        |
| 9 "                   | 152 " " 2 " 32 "                        |
| 10 "                  | 169 " " 2 " 49 "                        |
| 20 "                  | 338 " " 5 " 38 "                        |
| 30 "                  | 507 " " 1 oz. 0 dr. 27 min.             |
| 40 "                  | 676 " " 1 " 3 " 16 "                    |
| 50 "                  | 845 " " 1 " 6 " 5 "                     |
| 60 "                  | 1014 " " 2 " 0 " 54 "                   |
| 70 "                  | 1183 " " 2 " 3 " 43 "                   |
| 80 "                  | 1352 " " 2 " 6 " 32 "                   |
| 90 "                  | 1521 " " 3 " 1 " 21 "                   |
| 100 "                 | 1690 " " 3 " 4 " 10 "                   |
| 1000 "                | 1 litre = 35 fluid oz. 2 dr. 11 minims. |

#### THE CONVERSION OF FRENCH (METRIC) INTO ENGLISH WEIGHT.

The following table, which contains no error greater than one tenth of a grain, will suffice for most practical purposes:—

|             |                                                       |
|-------------|-------------------------------------------------------|
| 1 gramme =  | 15 $\frac{3}{4}$ grains.                              |
| 2 grammes = | 30 $\frac{3}{4}$ "                                    |
| 3 "         | 46 $\frac{1}{2}$ "                                    |
| 4 "         | 61 $\frac{1}{4}$ " or 1 dram. 1 $\frac{1}{2}$ grains. |
| 5 "         | 77 $\frac{1}{2}$ " " 1 " 17 $\frac{1}{2}$ "           |
| 6 "         | 92 $\frac{3}{4}$ " " 1 " 32 $\frac{3}{4}$ "           |
| 7 "         | 108 " " 1 " 48 "                                      |
| 8 "         | 123 $\frac{3}{4}$ " " 2 " 3 $\frac{3}{4}$ "           |
| 9 "         | 138 $\frac{1}{2}$ " " 2 " 18 $\frac{1}{2}$ "          |
| 10 "        | 154 $\frac{1}{2}$ " " 2 " 34 $\frac{1}{2}$ "          |
| 11 "        | 169 $\frac{1}{2}$ " " 2 " 49 $\frac{1}{2}$ "          |
| 12 "        | 185 $\frac{1}{2}$ " " 3 " 5 $\frac{1}{2}$ "           |
| 13 "        | 200 $\frac{3}{4}$ " " 3 " 20 $\frac{3}{4}$ "          |
| 14 "        | 216 " " 3 " 36 "                                      |
| 15 "        | 231 $\frac{3}{4}$ " " 3 " 51 $\frac{3}{4}$ "          |
| 16 "        | 247 " " 4 " 7 "                                       |
| 17 "        | 262 $\frac{1}{2}$ " " 4 " 22 $\frac{1}{2}$ "          |
| 18 "        | 277 $\frac{1}{2}$ " " 4 " 37 $\frac{1}{2}$ "          |
| 19 "        | 293 $\frac{1}{2}$ " " 4 " 53 $\frac{1}{2}$ "          |
| 20 "        | 308 $\frac{3}{4}$ " " 5 " 8 $\frac{3}{4}$ "           |
| 30 "        | 463 " " 7 " 43 "                                      |
| 40 "        | 617 $\frac{1}{4}$ " " 10 " 17 $\frac{1}{4}$ "         |
| 50 "        | 771 $\frac{1}{2}$ " " 12 " 51 $\frac{1}{2}$ "         |
| 60 "        | 926 " " 15 " 26 "                                     |
| 70 "        | 1080 $\frac{1}{2}$ " " 18 " 0 $\frac{1}{2}$ "         |
| 80 "        | 1234 $\frac{1}{2}$ " " 20 " 34 $\frac{1}{2}$ "        |
| 90 "        | 1389 " " 23 " 9 "                                     |
| 100 "       | 1543 $\frac{1}{2}$ " " 25 " 43 $\frac{1}{2}$ "        |
| 1000 "      | 1 kilogram = 35 oz. 2 drams.                          |

#### TABLE FOR CONVERTING MILLIMETRES INTO INCHES.

|                     |                        |
|---------------------|------------------------|
| 1 millimetre =      | $\frac{1}{25.4}$ inch. |
| 2 "                 | $\frac{1}{12.7}$ "     |
| 3 "                 | $\frac{1}{8.467}$ "    |
| 4 "                 | $\frac{1}{6.35}$ "     |
| 6 $\frac{1}{2}$ "   | $\frac{1}{4}$ "        |
| 8 $\frac{1}{2}$ "   | $\frac{1}{3}$ "        |
| 9 $\frac{1}{2}$ "   | $\frac{1}{2}$ "        |
| 10 $\frac{1}{2}$ "  | $\frac{1}{1.9}$ "      |
| 13 "                | $\frac{1}{2}$ "        |
| 15 "                | $\frac{1}{2}$ "        |
| 16 "                | $\frac{1}{2}$ "        |
| 17 "                | $\frac{1}{2}$ "        |
| 19 "                | $\frac{1}{2}$ "        |
| 21 "                | $\frac{1}{2}$ "        |
| 22 millimetres =    | $\frac{1}{4.5}$ inch.  |
| 23 $\frac{1}{2}$ "  | $\frac{1}{2}$ "        |
| 25 $\frac{1}{2}$ "  | $\frac{1}{2}$ "        |
| 51 "                | $\frac{1}{2}$ "        |
| 76 "                | $\frac{1}{2}$ "        |
| 101 $\frac{1}{2}$ " | $\frac{1}{2}$ "        |
| 127 "               | $\frac{1}{2}$ "        |
| 152 "               | $\frac{1}{2}$ "        |
| 178 "               | $\frac{1}{2}$ "        |
| 203 "               | $\frac{1}{2}$ "        |
| 228 $\frac{1}{2}$ " | $\frac{1}{2}$ "        |
| 254 "               | $\frac{1}{2}$ "        |
| 279 $\frac{1}{2}$ " | $\frac{1}{2}$ "        |
| 305 "               | $\frac{1}{2}$ "        |

1 metre = 39.37 inches. 1 kilometre = 0.62137 or  $\frac{5}{8}$  of a mile.

In using the abbreviation of the French gramme, never write it g. or gr. as they may be taken as meaning grains; grm. or gm. is better. Never use the term *drops* when wishing to be accurate, as drops differ in almost every liquid, as shown by the following few examples:—

|                                              |           |
|----------------------------------------------|-----------|
| 1 fluid drachm of hydrochloric acid contains | 54 drops. |
| 1 " " " nitric acid                          | 84 "      |
| 1 " " " sulphuric acid                       | 90 "      |
| 1 " " " alcohol .388                         | 138 "     |
| 1 " " " ether                                | 150 "     |
| 1 " " " distilled water                      | 45 "      |

Whilst upon the subject of weights and measures, it probably would not be amiss to explain one or two terms of frequent occurrence in photographic writings, such as "60 grain solution," "10 per cent. solution," "1 in 5," "1 to 5," etc.

"60 grain solution." By this term is meant that every ounce of the solution contains 60, or whatever the number may be, grains of the salt.

"10 per cent. solution." There has been so much discussion on this point in past volumes of the AMATEUR PHOTOGRAPHER that most workers now know that it means that every 10 parts, whether minims, drachms, or ounces, contain 1 part of the salt or agent.

"1 in 5." This means that every five parts contain one of the ingredients referred to.

"1 to 5." Possibly it may seem to some that these last two terms are synonymous, but they are not so really, for if we take 1 oz. of any soluble solid and add it to 5 oz. of distilled water, we do not get 5 oz. of solution, but rather more; whereas to make a 1 in 5 solution, we must weigh out, let us say, an ounce of salt, add it to 3 or 3 $\frac{1}{2}$  oz. of water, and then bring the total bulk up to 5 oz.

This again brings us to the very loose method of writing photographic formulæ. We will take two instances:—

| (1)                      | (2)                             |
|--------------------------|---------------------------------|
| Pyrogallol... .. 1 oz.   | Pyrogallol... .. 1 oz.          |
| Sodium sulphite ... 4 "  | Sodium sulphite ... 4 "         |
| Citric acid ... 4 "      | Citric acid ... $\frac{1}{4}$ " |
| Distilled water ... 10 " | Distilled water ... to 10 "     |

No. 1 will measure more than 10 oz., and No. 2 should measure exactly 10 oz. This may be hair splitting, but when uniformity and accuracy are desirable, such minor points as these are excessively worrying and perplexing in trying to compare analogous formulæ. One of the most useful tables ever compiled for the use of photographers is that by Messrs. Lyonel Clark and Ferrero. By aid of this we can at once see how many grains of any given substance there may be in any developer, and by having stock solutions of a definite strength, either 5, 10, or 20 per cent., we can immediately compound a developer sufficient for trial without mixing up a huge bottleful, or entering into any calculation.



## DEVELOPING FORMULÆ.

COMPILED BY MESSRS. LYONEL CLARK AND E. FERRERO.

*The Quantities are given in Grains and Minims per Ounce of Developer.*

| PLATES.                                       | Pyro      | Ammonium Bromide. | Potassium Bromide. | Ammonia.     | Sodium Carbonate. | Potassium Carbonate. | Ammonium Carbonate. | Sodium Sulphite. | Potassium meta-bisulphite. |
|-----------------------------------------------|-----------|-------------------|--------------------|--------------|-------------------|----------------------|---------------------|------------------|----------------------------|
|                                               | Grains.   | Grains.           | Grains.            | Minims.      | Grains.           | Gr.                  | Gr.                 | Grains.          |                            |
| Academy.....                                  | 2         | 2                 | ...                | 4            | ...               | ...                  | ...                 | ...              | ...                        |
| Beechey (Dry Collodion) ...                   | 12        | ...               | 3                  | ...          | ...               | ...                  | 30                  | ...              | ...                        |
| Beernaert ...                                 | 4.78      | ...               | ...                | ...          | 16.05             | ...                  | ...                 | 32.10            | ...                        |
| Britannia ...                                 | 2         | 2                 | ...                | 4            | ...               | ...                  | ...                 | ...              | ...                        |
| Cadet's ...                                   | 1.50      | 3                 | ...                | 6            | ...               | ...                  | ...                 | ...              | ...                        |
| Charterhouse                                  | 1.36      | 3.40              | ...                | 1.36         | ...               | ...                  | ...                 | 2.72             | ...                        |
| Cranbourne                                    | 1.10      | ...               | 0.72               | 2.30         | ...               | ...                  | ...                 | 4.40             | ...                        |
| Eastman's Strip. Flm.                         | 4.50      | ...               | ...                | ...          | 19                | ...                  | ...                 | 27               | ...                        |
| Do. Do.                                       | 3.53      | ...               | ...                | ...          | 12                | 3                    | ...                 | 21.18            | ...                        |
| Do. Do.                                       | ...       | ...               | ...                | ...          | ...               | ...                  | ...                 | ...              | ...                        |
| (NH <sub>4</sub> ).....                       | 2         | 0.50              | ...                | 3            | ...               | ...                  | ...                 | ...              | 2                          |
| Edwards's XL                                  | 2.10      | 0.50              | ...                | 2            | ...               | ...                  | ...                 | ...              | ...                        |
| England's ...                                 | 1.50      | ...               | 1                  | 2            | ...               | ...                  | ...                 | ...              | ...                        |
| Ditto, Inst.                                  | 3.40      | ...               | ...                | ...          | ...               | 8.60                 | ...                 | 17               | ...                        |
| Elliott and Fry's.....                        | 2         | 0.30              | ...                | 1 to 1.30    | ...               | ...                  | ...                 | ...              | ...                        |
| Elliott's ...                                 | 3         | 1                 | ...                | 3            | ...               | ...                  | ...                 | ...              | ...                        |
| Ditto, Extra Special.....                     | 2         | 1                 | ...                | 3            | ...               | ...                  | ...                 | ...              | ...                        |
| Do. Kingston, Special.....                    | 2         | 0.71              | ...                | 2            | ...               | ...                  | ...                 | ...              | ...                        |
| Do. Do. Inst.                                 | ...       | ...               | ...                | ...          | ...               | ...                  | ...                 | ...              | ...                        |
| Globe ...                                     | 2         | 1                 | ...                | 4            | ...               | ...                  | ...                 | ...              | ...                        |
| Ilford ...                                    | 1.85      | 2.50              | ...                | 4 50         | ...               | ...                  | ...                 | ...              | ...                        |
| Lancaster's...                                | 2.40      | ...               | 0.63               | 5            | ...               | ...                  | ...                 | ...              | ...                        |
| Ludgate ...                                   | 2.14      | ...               | 0.23               | 1.87         | ...               | ...                  | ...                 | ...              | ...                        |
| Manchester No. 1 ...                          | 2         | Brom. to          | Am. as             | 1 to 4       | ...               | ...                  | ...                 | ...              | ...                        |
| Do. No. 2 ...                                 | 2         | 1.50              | 0.75               | 3            | ...               | ...                  | ...                 | 6                | ...                        |
| Do. No. 3                                     | ...       | ...               | ...                | ...          | ...               | ...                  | ...                 | ...              | ...                        |
| Sulph-Pyro                                    | 2         | 0.90              | 0.46               | 1.80         | ...               | ...                  | ...                 | ...              | ...                        |
| Do. No. 4 do. (Potash) ...                    | 2         | ...               | 0.12               | ...          | ...               | 4                    | ...                 | ...              | ...                        |
| Do. No. 5 do. (Soda) ...                      | 2         | ...               | 0.12               | ...          | ...               | 4                    | ...                 | ...              | ...                        |
| Mawson and Swan's.....                        | 1.50      | 0.75              | ...                | 3.75         | ...               | ...                  | ...                 | ...              | 1.50                       |
| Do. New Cheap ...                             | 1.50      | 1.50              | ...                | 3.75         | ...               | ...                  | ...                 | ...              | ...                        |
| Do. (Soda) ...                                | 1         | ...               | 0.50               | ...          | 14                | ...                  | ...                 | 21               | ...                        |
| Do. Photo-Mechanical and Lantern              | 1.50      | 0.75              | ...                | 3            | ...               | ...                  | ...                 | ...              | 1.50                       |
| Monckhohn's                                   | 1.25      | 1.50              | ...                | 2 to 4       | ...               | ...                  | ...                 | ...              | ...                        |
| Morgan and Kidd's ...                         | 2         | 0.25              | ...                | 1            | ...               | ...                  | ...                 | ...              | ...                        |
| Do. Richmond                                  | 2 or more | 0.20 or more      | ...                | 0.83 or more | ...               | ...                  | ...                 | ...              | ...                        |
| Nelson .....                                  | 2         | 2.90              | ...                | 11.33        | ...               | ...                  | ...                 | ...              | ...                        |
| Obermeyer ...                                 | 0.80      | ...               | 0.20 to 0.50       | ...          | 7 to 10           | ...                  | ...                 | 40               | ...                        |
| Paget's.....                                  | 1.82      | 0.45              | ...                | 2.50         | ...               | ...                  | ...                 | 7.29             | ...                        |
| Premier ...                                   | 2         | 2.50              | ...                | 3            | ...               | ...                  | ...                 | ...              | ...                        |
| Rouch's ...                                   | 1.26      | 1.26              | ...                | 3            | ...               | ...                  | ...                 | 5.04             | ...                        |
| Soho.....                                     | 1.90      | 1.25              | ...                | 2.25         | ...               | ...                  | ...                 | ...              | ...                        |
| Thomas's.....                                 | 1.08      | 1.08              | ...                | 2.40         | ...               | ...                  | ...                 | 4.32             | ...                        |
| Do. (Potash)                                  | 2.25      | 0.11              | ...                | ...          | ...               | 9.37                 | ...                 | 6.75             | ...                        |
| Trafalgar ...                                 | 1         | ...               | 1                  | 1.30         | ...               | ...                  | ...                 | ...              | ...                        |
| Vogel (Obermeyer) Azaline Plates              | 1         | ...               | ...                | ...          | 7.50 to 11.25     | ...                  | ...                 | 50               | ...                        |
| Wratten and Wainwright Ordinary...            | 2         | ...               | 0.33               | 250          | ...               | ...                  | ...                 | ...              | ...                        |
| Wratten and Wainwright Instanto....           | 3         | ...               | 0.33               | 250          | ...               | ...                  | ...                 | ...              | ...                        |
| Wratten and Wainwright Spec. Drop Shutter ... | 3         | ...               | 0.62               | 250          | ...               | ...                  | ...                 | ...              | ...                        |
| Wratten and Wainwright (Soda) .....           | 3         | ...               | ...                | ...          | 18                | ...                  | ...                 | 18               | ...                        |

Several formulæ of dead and bygone plates have been struck out.

(To be continued.)

**Interesting Lecture at Crewe.**—On the 8th inst. an interesting lecture was given in the Town Hall under the auspices of the photographic section of the Crewe Scientific Society, by Mr. Paul Lange, President of the Liverpool Photographic Society. The title of the lecture was "Norway and its Wonders." Mr. H. D. Earl, Vice-President of the society, occupied the chair, in the unavoidable absence of Mr. F. W. Webb, and there was a large audience, many amateur photographers being present.

## Elementary Photography.

BY JOHN A. HODGES.

## CHAPTER III.—(Continued.)

THE following chemicals will be required :

**Pyrogallic acid** (1 oz.), price about 1s. 1d. This substance is of a very poisonous nature, although the fact is not generally known among photographers. There are, however, few cases on record where it has been taken internally. Its effects on the human system are slow, and there are no certain antidotes. I only mention the matter here because pyro, as it is usually called, is so very generally and often carelessly used in entire ignorance of its poisonous properties.

**Sulphite of soda** (1 lb.), cost about 6d. This chemical is added to the developer to prevent the pyrogallic acid from becoming discoloured, which it rapidly does without this addition.

**Bromide of potassium** (2 oz.), about 4d.

**Hypsulphite of soda** (6 lb.), 1s.

**\*Liquid ammonia** (888) (4 oz.), 4d. This is exceedingly volatile, and must be kept in a stoppered bottle. The fumes are very pungent and injurious to inhale, therefore, in opening the bottle care should be taken to hold it well away from the face.

**Oxalate of potash** (1 lb.), 10d.

**Sulphate of iron** (1 lb.), 3d.

**Acetate of soda** ( $\frac{1}{2}$  lb.), 4d.

**Chloride of gold** (Johnson's) (15 gr. tube), 1s. 9d.

**Alum** (1 lb.), 2d.

**Citric acid** ( $\frac{1}{4}$  lb.), 6d.

**\*Glacial acetic acid** (2 oz.), 6d.

**Bichloride of mercury** (1 oz.), 4d.

**\*Perchloride of iron** (1 oz.), 4d.

The cost of the foregoing chemicals, with the necessary bottles to contain them, will be about ten shillings, and, although a smaller quantity might be sufficient for the beginner's immediate needs, yet it will be found more economical to purchase in quantity, the rate per ounce being, in most cases, considerably higher than that per pound. The chemicals should always be the best obtainable. Cheap chemicals are worse than useless, therefore always go to a respectable dealer for them.

In addition to the apparatus already referred to, two camel's-hair brushes should be obtained, one a flat one about 1½ in. broad, and the other an ordinary round mop, such as is used for water-colour painting. The former is to be kept for the special purpose of dusting each plate, both before it is placed in the dark slide, and afterwards when it is removed from the slide and placed in the developer. The smaller brush is to be used to remove any air bubbles from the plate, which sometimes form when it is in the developer. This must be washed after use, or the solution will quickly cause its destruction.

## CHAPTER IV.

## THE DARK-ROOM AND ITS FITTINGS.

The Dark-room Described—Effect of White Light upon Sensitive Surfaces—How to Provide the Dark-room with Non-Actinic Light—Stopping up all Chinks admitting Light—How to Make a Developing Table and Sink—Laying on the Water—How to Make a Grid—The Operating Table—Shelves—The Importance of a "Tidy" Dark-room enforced—Other Details—Ventilation, how to Ensure it, etc.

THE apartment in which the photographer carries out his operations is usually, but erroneously, termed "the dark-room," for it is not in reality, or should not be, "dark," in



the ordinary acceptation of the term, at all. It is not, of course, illuminated in the ordinary manner with daylight, the light with which it is provided being of an orange or ruby colour, which has no prejudicial effect upon the prepared sensitive dry-plates. My readers will, of course, understand that the packets of sensitive dry plates must only be opened in such a light as that to which I have just referred, and that the exposure of them for even a fractional part of a second to ordinary white light will render them absolutely worthless for photographic purposes.

It is highly desirable that the photographer should secure, for his own exclusive use, an apartment which he can convert into a dark-room, but as this is not always possible, I shall, in the present chapter, describe the fitting up of an ordinary apartment as a dark-room, and in the succeeding chapter I shall describe a method of constructing, from ordinary materials, a contrivance which will serve as an efficient substitute. Any small room, or even a large cupboard, may be converted into a dark-room, although in the latter case adequate provision must be made for proper ventilation.

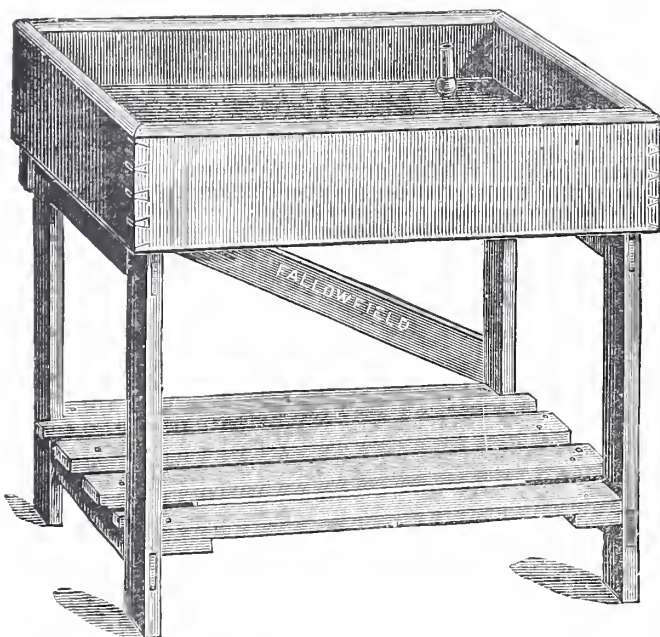


FIG. 12—(OPEN).

Let it be assumed that a room of the dimensions given in the drawing, namely, 12 ft. by 10 ft., has been secured; the first thing to do will be to devise some means of blocking out the white light and providing an abundant supply of orange, or non-actinic light, as it is called, in its place. We will assume that there is only one window in the room to deal with. We therefore with stout brown paper and some strong paste, proceed to block out all the upper panes, by pasting two thicknesses of brown paper over them. We then make a wooden frame large enough to just cover the lower sash frame, and upon this we stretch, with the assistance of some tin tacks and strong glue, two thicknesses of a yellow fabric called canary medium, which is obtainable at any photographic warehouse. When this is quite dry, one thickness of deep orange paper must be pasted over it. This screen, when placed in position, will allow an abundance of soft orange light to pass through which will have no injurious effect upon the plates. In order to prevent any stray rays of white light peeping through between the screen and the sash, the back portion of the screen frame should have a broad strip of felt nailed all round it. Two turn-buttons, screwed to the window frame will keep the frame in position. If direct sunlight falls

up on the window, this light will not be safe, and to make it so a piece of ruby cloth, the full size of the screen frame, should be hung inside by means of small hooks; it can then be easily removed when the sun ceases to shine upon the window. Having put the screen in position, and allowed

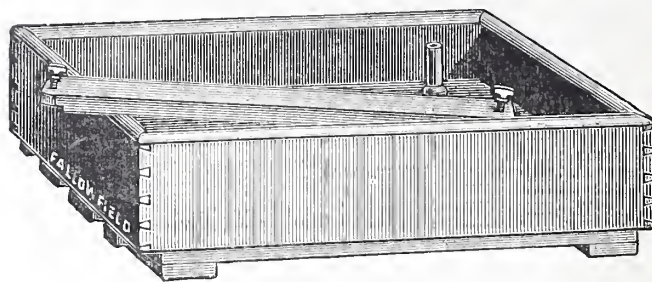


FIG. 13—(CLOSED).

the eyes to become accustomed to the subdued light, it will be necessary to look round the room with a view to the detection of stray beams of light coming from chinks and cracks in the door; the brown paper and the paste will be of assistance in stopping up these.

The developing table and sink must now be considered. Those of my readers to whom expense is not a matter of consideration may prefer to buy one of the very complete and handy developing stands shown in figs. 12 and 13, which may be obtained from any of the dealers, but to others who may wish to construct their own apparatus, when possible, the following suggestions may be useful:—Obtain some ordinary floor-boards, which are usually about 6 in. broad and  $\frac{3}{4}$  in. thick. Cut two pieces 3 ft. long, and two pieces 18 in. long; nail these together so as to form a kind of bottomless tray. Nail this with long "cut nails" to the wall about 3 ft. from the ground just under the window, screwing to the front two additional pieces 3 ft. 6 in. long

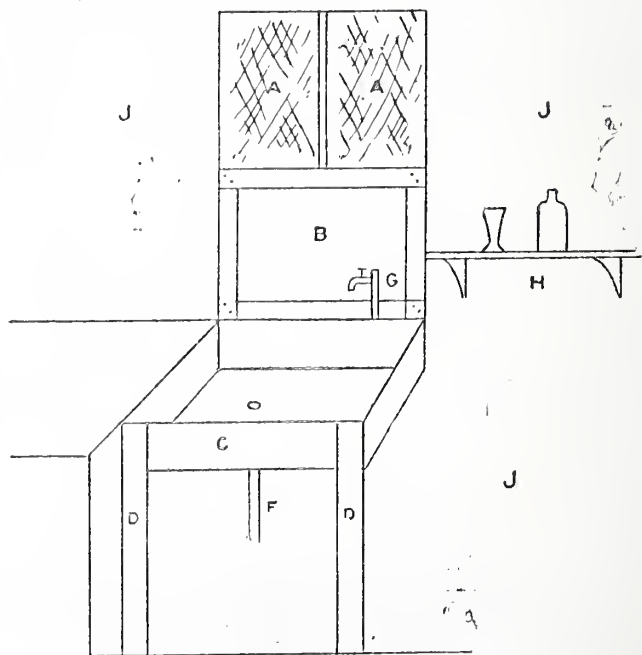


FIG. 14.

to form legs and give support. A thin nail driven slanting through the support, and into the floor, will make the framework quite firm. Now call in a plumber, and tell him to make you a stout zinc tray just large enough to fit in your wooden tray, to which it may be secured by turning over about an inch of the metal all round the top, and securing it with nails to the top of the frame. A hole should be cut



in the centre of the zinc tray, and a piece of lead pipe attached to carry off the waste developer and washing water. This directs our attention to an important matter, and one in which the assistance of the plumber may be invaluable. A plentiful supply of water is almost a *sine qua non* with the photographer, and, if it is within the bounds of possibility, water should be laid on to the dark-room from the house cistern, or, preferably, from the main. The tap should be fixed about 8 in. above the sink, and should not be too large, as a heavy stream of water, is not needed. Fig. 14 gives a rough sketch of the details of construction. In order to avoid the necessity of standing dishes, etc., in the bottom of the sink, which soon will become dirty and contaminated with the constant stream of refuse chemicals, a grid will be necessary. To make it, cut some thin strips of wood about  $\frac{1}{4}$  in. less in width than the width of the sink, and nail these about  $\frac{1}{2}$  in. apart to two pieces of wood 12 in. long by 5 in. deep; the grid will then present the appearance shown in fig. 15. A large common

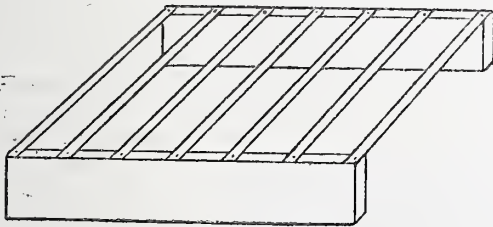


FIG. 15.

deal dressing-table, which can be obtained second-hand for about 3s., should be placed against the wall level with the developing sink, and on the wall at the back a tier of shelves should be put up upon which to place the various chemicals which have already been purchased. The shelving may with advantage be continued right round the room, for although the necessity for it may not be apparent at first, the amateur photographer will be surprised to find how, after he has practised the art for a short period, the various paraphernalia incidental to its pursuit accumulate, and he will then be glad to find that he has made some provision for its reception. A tidy and well-appointed dark-room is a great comfort to its owner, an untidy one an everlasting source of discomfort and ill-success. To the right of the window a broad, low shelf should be fixed, within easy reach of the hand when seated at the developing sink, upon which a measure, and the bottles containing the various developing solutions, can be placed.

If it is impossible to bring a supply of water to the sink, an effort should at any rate be made to connect the waste pipe with the nearest drain or gutter, otherwise it will be necessary to place a pail, or other receptacle, underneath the sink to catch the sloppings and waste water, and it will, moreover, require constant vigilance on the part of the operator to see that the pail does not overflow and allow the contents to find their way to the ceiling of the apartment beneath.

While it is necessary to stop up all chinks and crannies which admit promiscuous rays of light, it is also important to take precautions to ensure the efficient ventilation of the dark-room, for the reader will probably find, if he becomes at all enthusiastic, that a considerable portion of his leisure will be spent there. If a fireplace exist in the room, matters will be simplified, and little will remain to be done. With a centre bit about an inch in diameter bore out a row of holes about an inch apart in the bottom of the door near the floor, and just above these nail a piece of wood, the edge of which has been bevelled off, so that it may stand out at an angle, as shown in the sketch at fig. 16. This, in conjunction

with the fireplace, will ensure a current of air continually passing through the room.

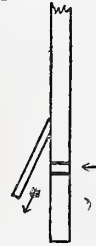


FIG. 16.

If the foregoing directions have been carefully carried out, the reader will be in possession of as comfortable and practical a dark-room as even the most experienced of photographers could desire, and his operations will be much facilitated. At the same time it must not be supposed that possession of a properly appointed dark-room is absolutely essential to success; were it so, the very large army of amateur photographers would be sadly thinned. Many amateurs, under the exigencies of their surroundings, are compelled to either work under conditions which, to say the least, are adverse to success, or to give up the practice of their hobby. In the next chapter I propose to describe the construction of a portable dark-room, which may be made from very ordinary materials and at a nominal cost by anyone able to use a hammer and a saw.

(To be continued.)

## ON PLATINUM TONING AS APPLIED TO GELATINO-CHLORIDE PRINTING-OUT PAPER.

BY JAMES BROWN.

(Concluded from page 104)

COMING to the actual manipulations, the first item is the preliminary washing, which must be *thorough*. The first wash must be rapidly performed, so as not to keep the prints soaked in the dissolved-out silver, else yellowing of the high lights will result. After four changes of water, it is necessary to dissolve out all the remaining free silver by a salt bath. After a minute or two in this, and another rinse in water, the prints are ready to tone. At this stage they are but little changed, and the process of toning, unless much prolonged, produces no effect that is visible to the eye. We only discover what tone we have got when the prints are in the hypo bath; but the action is so regular that success is certain. It is instructive, however, to see what colour of image we are working upon by fixing a print without any toning, and I will presently show you a few examples. It will be found that the image suffers a very considerable reduction, and partakes of a yellowish-red hue. By simply fixing without toning, warm red tones can be got if we print deep enough to compensate for the reduction that takes place, and there is no reason to suppose that such images should fade any more than does a bromide print. Indeed, the chances are in favour of the former, as it has not been in contact with any salts of iron, or acid clearing bath. I have spoken of the necessity of keeping up a definite relation between the depth of printing and the ultimate tone desired. Simply fixing a print much reduces its depth, but the more platinum we associate with the silver image the less does it reduce. This applies to all papers, but in a greater degree to the Ilford "printing-out-paper." Toning proceeds on certain definite lines, the stages being red, reddish-brown, sepia, brown, dark brown, and purplish brown. For the first stage, printing ought to be continued till the deepest shadows are slightly bronzed, and the toning will take, say, five minutes. With such an over-printed image, longer toning seems to intensify the print, and to block up the shadows. For any other tone than red, it is not advisable to print till the bronzing stage is reached, but to stop when the whites are slightly tinted, and toning will be accomplished in from five to fifteen minutes. The warmth of tone, which is the characteristic of this process, it is evident has for its foundation the yellowish-red of the silver image, and, as we associate it with platinum in a greater or lesser degree, the tone varies from a warm red to the other shades I have named. There have been various attempts to completely substitute platinum for the less stable silver, but with no success. It was first supposed that the toning process was a depositing of metallic platinum upon the image; then it became the belief that a partial substitution took place; but Lyonel Clark, in his book, assumes, with considerable show of reason, that an alloy of silver and the nobler metal takes place. Be that as it may, it is a process which, for certainty and beauty of results, merits everyone giving it a fair trial.



After toning, the prints may be immersed in a weak solution of common soda, to neutralise any acidity present and stop toning, or may be placed direct in the fixing bath, made distinctly alkaline with ammonia, and not stronger than one part hypo to eight parts of water. For the sake of giving the prints a fair chance in the battle of life, it is advisable to have the hypo bath fresh, and to fix for not less than half an hour. After thoroughly washing in copious changes of water, the prints are given a five-minutes' soaking in a bath of chrome alum of about twelve grains to the ounce. To avoid acidity, neutralise this with ammonia, and filter out the dense precipitate which is formed. This is of the greatest advantage, as it hardens the gelatine and renders it almost impervious to damp. So great is its hardening effect that a print so treated and dried cannot again be softened, and resists water almost boiling.

The next stage is the squeegeeing, which is best done upon finely ground glass. Bear in mind, however, that this must take place as soon as they are washed free from the chrome alum, as, if they are allowed to dry, they cannot be so treated. The adoption of the alum bath makes the sticking of prints to the glass almost an impossibility, and this is no small advantage. Much rubbish has been written about cleaning the glass plates previous to putting down the prints—by myself amongst the number. If really dirty, Monkey soap will remove it all. Flowing hot water over the plate, and rubbing with the palm of the hand, will do the rest. It can then be placed under the tap and cold water run over it, then place the wet print in position, with blotting-paper on the top, then a piece of waterproof sheeting, and squeegee vigorously. It is necessary to remember that any attempt to remove the prints before they are dry is to court failure. A matt-surface may be got much more easily by the use of finely ground pumice-stone powder, rubbing it on the dry print by hand. Mounting presents no difficulty if the prints be properly hardened in the alum bath.

It only now remains for me to briefly indicate some of the characteristics of the various brands of paper.

Obernetter's ordinary brand gives very fine results (his other makes I have not tried). Over-printing in the ordinary sense is not advisable, although there is a small amount of reduction. The paper is thinner than some others, and, therefore, must not be roughly handled.

Celerotype is a thick paper, and tones easily—printed normal.

Jacoby's requires deeper printing, and has a good range of tones, the warmer shades possessing a distinctive quality not seen in any other paper.

Luminotype, Talbot's "Beta," and Liesegang's aristotype behave well, and there is no great difference in result between any of them; but they have one defect in common, or, rather, the samples I have had through my hands possess that defect, viz., they are stained either pink or mauve.

Kuntzen's collodion is a thoroughly good collodion paper, unfortunately also stained mauve, normal printing, and tones easily, yielding similar results to gelatine; but, on account of the hardness of a collodion image, it cannot be squeegeed.

Ilford "printing-out paper" possesses characteristics of its own. It does not require such deep printing as any of the others, and will not pass to the bronzing stage. Deep printing is indicated by blocking up of the shadows, but this point must not be reached unless short toning and reddish tones be desired. In my hands it has yielded a greater range of colour than any other brand (from yellow to almost purple). For anything approaching full toning great care must be taken not to over-print.



## Enlarging Factors Simplified.

By A. S.

It is astonishing how averse many people are to face even the simplest figuring, although they know these calculations would materially facilitate their work in the direction of precision and economy; and it is no uncommon experience to find folks making a mountain of a mole-hill over the uniform ratio system of stops, which has proved such a boon, more especially since the gelatine process necessitated closer attention to exposures than the older and slower processes.

If care and precision are all important in the field, they are equally so when the negative is transferred to the dark-

room to undergo the process of enlarging, and if the manufacturers reap the benefit of the vast quantities of plates spoiled by untimely exposures, largely by a reluctance to master the simple elements of the uniform ratio system by the fireside of a winter's evening, there must also be a large revenue from bromide papers, opals, etc., spoiled in guess-work enlarging.

From the numerous enquiries appearing in the photographic journals regarding the exposures for enlargements, and the vague way they are put by beginners especially, there appears to be much confusion on the subject, and I hope to show in some measure how discouraging results may be avoided by a careful study of the data involved.

Daylight enlarging is no doubt quick, handy, and cheap, if one does not mind the setting up of the apparatus, but it is so uncertain in our climate, and can only be practised in the daytime, when many amateurs may be otherwise occupied. Even when artificial light is employed it is well known that many who have gone into the matter have speedily become so discouraged as to give up all hope of getting uniformly successful results, and to hand over their negatives to be enlarged by specialists. But I can assure those workers, from personal experience, that there is no branch of the photographer's art more fascinating and delightful than on winter evenings to set up an enlarging arrangement, project the image on the screen, and to see the latent image grow to a beautiful enlarged picture. I now proceed to show a simplified method of arriving at the necessary calculations to ensure successful results.

With my quarter-plate enlarging apparatus I find the distances from the lens stop to the image for each standard size. I then find a *percentage* increase of time for each increase of size by assuming a given time for an enlargement from quarter plate to whole-plate. Example:—

$$\begin{aligned} (a) & 8\frac{1}{2} \times 6 : 10 \times 8 :: 4. \\ (b) & (19 \text{ in.})^2 : (21\frac{1}{2} \text{ in.})^2 :: 4 : 5.12. \end{aligned}$$

Take the ascertained increase of exposure and convert it into a percentage factor, thus:—

$$(c) 4 : 100 :: 1.12 : 28.$$

therefore 28 per cent. is the fixed increased exposure on the relative distance between  $8\frac{1}{2}$  and  $6\frac{1}{2}$  and  $10 \times 8$ .

Having got the percentages which are fixed by the law of the squares of distances, I proceed to find by experiment the *actual* exposures required with typical negatives from quarter-plate to whole-plate, and employ upon these the percentages obtained as above; and I show my results in tabular form, assuming, of course, that the same light, lens, stop, sensitive surface, and developer (at temp. 60 deg.) be employed throughout.

|                                                     |          |           |            |            |             |             |
|-----------------------------------------------------|----------|-----------|------------|------------|-------------|-------------|
| (A) Standard sizes:—                                | 8½ by 6½ | 10 by 8   | 12 by 10   | 15 by 12   | 20 by 16    | 24 by 18    |
| (B) Distances from lens stop to image:—             | 19       | 21½       | 24         | 29         | 36½         | 42½ in.     |
| (C) Increase of time required per cent.:—           | —        | 28        | 59         | 135.5      | 269         | 400.25 p.c. |
| (D) Increase of time roughly in fractions:—         | —        | fully ¼   | fully ½    | 1½         | 2¾          | 4 times     |
| (E) Example: Thin quarter-plate negative requires:— | 30 sec.  | 38 sec.   | 48 sec.    | 1 m. 10 s. | 1 m. 51 s.  | 2 m. 30 s.  |
| (F) Dense negative requires:—                       | 4 min.   | 5 m. 8 s. | 6 m. 23 s. | 9 m. 25 s. | 14 m. 42 s. | 20 min.     |

If it is desired to use another stop, simply increase or diminish the ascertained exposure according to the Uniform Ratio system.

Having constructed such tables for three or more typical negatives, they will be found most useful as guides to the approximate exposure for any size enlargement.



## Composition, and Light and Shade.

*Selected and arranged for the use of Photographers, from "Burnet's Essays," with Introduction and Notes.*

By H. P. ROBINSON.

(Concluded from p. 63.)

### CHAPTER XXII.

I HAVE in these brief notices of the art of light and shade endeavoured to point out the various modes of establishing a scientific arrangement of its powers, and applying them to any subject the student may have in hand. The changes are infinite; but, by an attentive examination of the effects in nature or in art, he will find the sources from which they arise few and simple. Opie, in his lectures, speaking of *chiaroscuro*, strongly recommends the study of the several masters who have excelled in this department of the art; "By studying the works of the great masters of *chiaroscuro*, he will by degrees become acquainted with all the artifices of contrasting light to shade, colour to colour, to produce relief, of joining light objects together, and dark objects together, in masses, in order to give splendour and breadth of effect; of gradually sinking some objects wholly or partly in shadow, and losing their outlines in the ground, to produce softness and harmony; and of making, in other places, abrupt breaks and sharp transitions, to produce vivacity and spirit. He will also learn their rules for shaping their masses, and of adapting them in regard to force or softness to the nature of the subject, whether grave or gay, sublime or terrible. By this he must be directed when to give his light the form of a globe, or when to send it in a stream across his canvass; when to make a dark mass on a light ground, or a light mass on a dark ground; when he may let his light die away by imperceptible gradations, when diffuse it in greater breadth and abundance, and when it may more properly be concentrated into one vivid flash." This is so excellent, and embraces so many of the best modes of the management of light and shade, that the student who can comprehend them and put them in practice requires no further instruction in this part of the art. He will be in possession of a key to unlock the richest stores of nature; he will be in possession of a sort of shorthand to note down her most fleeting effects; and by understanding the cause which gives them existence, rivet them in his memory. Without having accustomed itself to this mode of arranging his observations, his life will be spent in an endless search after that which is continually passing before his eyes.

Light and shade, considered as a means of producing a deception, by making parts of picture advance, and other parts retire, so that everything may keep its relative situation, as regards the distance from the spectator, is a necessary attendant upon perspective. It is, however, often violated in the best works, for the purpose of giving a gene-

ral breadth, or of preserving the light in a good shape; but, when compatible with both these, it is of the utmost consequence; and the painter can enter into a competition with nature only by a perfect knowledge of the best modes of adapting it to such purpose.

Richness of effect, either by a mixture of the light and shade, so as to give an appearance of doubling to the outline, or by relieving the outline by a ground possessed of a variety of strengths; and distinctness of form, surrounded by flatness, when we wish any part to attract notice, or to preserve the expression undisturbed, are both under the dominion of *chiaroscuro*, to whose control the whole array of colours yields implicit obedience.

The application of light and shade, in a poetical point of view, is capable of creating an association of ideas without which the imagination of the spectator would experience nothing but disappointment. For example, if we represent a scene remarkable for disasters or shipwrecks, the mind is excited, and an expectation raised which none but an artist imbued with the poetry of the art can gratify, by clothing the scene in all the ominous effects of elemental strife.

Shakespeare, who was possessed of all the poetry of the art, clothes his scenery with those circumstances which awaken a thousand pleasing or awful sensations as the subject may require; whether

"The gray-ey'd morn  
smiles on the frown-  
ing night,  
Checking the eastern  
clouds with streaks  
of light,"

whether

"The glorious sun  
Stays in his course and  
plays the alchemist;  
Turning with splendour  
of his precious eye  
The meagre cloddy earth  
to glittering gold,"

or when

"Light thickens; and  
the crow  
Makes wing to the rooky  
wood."

or when he bids

"Thick night

Pall herself in the dunest smoke of hell!"

We have him adopting the softness and breadth of Correggio, the splendour and gorgeous effects of Veronese, Rubens, or Cuypp, or the ominous twilight and midnight darkness of Rembrandt or Michael Angelo Carravagio. His light and shade is the *chiaroscuro* of nature passing through a mind susceptible of its finest impressions, and capable of placing such effects before the eye of the spectator, "unshorn of their beams," or unimpaired in their sublimity.

Here end the two famous treatises which have had such an immense influence for good on art since they were first written. I have confined my part of the work of this edition to the arrangement of the chapters (for the original is very loosely put together), a few excisions, and the notes, adding nothing to the text. The sum of the whole is that a picture must be a work of art and not a mirror-like reproduction of nature; that it may contain many qualities, but it *must* have variety—variety of line and light and shade—and that its various parts shall be bound together in unity, and form one harmonious whole.

The illustration, fig 60, is by Titian, and is a very perfect example of the qualities of which good composition and light and shade consist, and as they are advocated in this book.



FIG. 60.—TITIAN.



## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER XVIII.—SHUTTERS—(Continued).

**THE POSITION OF THE SHUTTER.**—The position of the shutter with reference to the lens and the plate is a very important subject. We consider that there are six principal points at which the shutter may be placed, and each of which possesses its advantages and disadvantages. These are: (1) In front of the lens, but disconnected from the camera; (2) upon the hood or front mount of the lens; (3) in or near the diaphragm slot; (4) immediately behind the lens; (5) somewhere in the middle of the camera; (6) close to, and just in front of the plate. We will consider each of these positions in turn.

(1) *Shutter in front of lens, but not rigidly connected with the camera.* The evils of vibration of the camera caused by the motion of the shutter have been felt to be so great, that a few workers have placed their shutters upon an independent support (usually a light tripod), so that it shall stand a few inches in front of the lens, with which it is connected only by a sleeve of black velvet to exclude stray light. This plan obviates any blurring of the image due to the "shake" communicated to the camera by the motion of the shutter; but it is obviously cumbersome, and the opening of the shutter must be large, or some light will be cut off from the lens. It is easy to conceive of conditions, however, wherein this plan of a "separated shutter" might be both necessary and useful; but the same result can generally be more easily attained. With very high-speed shutters it would be most useful, for the shock produced by the stoppage of the moving part varies directly as the *weight* of the part, but as the *square* of its velocity. Thus when the speed is made *ten* times greater, it produces a shock *one hundred* times greater.

(2) *Shutter upon front of lens.* This is the most usual position for a shutter. All lenses as sold are provided with a cap. It would be better if each lens had *two* caps—one for each end—so that the glasses might be properly protected from dust, etc., when not in use, for this seems to us the only and proper use of lens-caps. As exposing agents lens-caps belong to the past; they ought to be superseded entirely by some form of shutter. Or a combination of cap and shutter might be feasible. Some time back we devised a lens-cap which was attached by a hinge to a metal ring passing round the mount of the lens. By sliding the ring forward the hinge was set free; and the cap could then be raised so as to make the exposure, while at the same time it acted as a shade for the lens. By this arrangement it is impossible for the cap to be lost or dropped, since it is permanently attached to the lens; it would also permit a very brief exposure—probably as little as the one-seventh of a second.

Most lenses possess a front *hood*, or removable metal ring, of larger diameter than the lens-tube. This hood should be removed, and the shutter fitted on to the lens-tube itself. This allows a much smaller shutter to be used, which is an advantage in several ways.

One advantage of "shutter on front of lens" is that it is easily put on and taken off. Another is that the whole action of the shutter is visible; so that it can be seen if it is working properly. The front is, however, the worst position for a *drop* shutter, for with this form of shutter we then get a longer exposure for the sky than for the foreground; whereas the contrary is, as a rule, desirable. A shutter on the front is also in the best position for producing that undesirable effect—the shaking of the camera.

To fit the shutter to any lens, or to two or more lenses, the rubber moulding sold by the Thornton-Pickard Co. will be found useful.

One defect of the position of shutter on front of lens is that the shutter is liable to be displaced and to fall off, perhaps becoming damaged in so doing; this is especially the case when the shutter is heavy and made of metal.

Care should be taken that the shutter does not prevent any light from entering the lens. To test this, let the shutter be fully opened and remove the ground-glass; then look from the margin of the camera-back through the lens—the camera being extended—no part of the shutter ought then to be visible.



FIG. 1.

The "Leicester Exposing Flap and Shade" of Messrs. Taylor (fig. 1) is intermediate between a lens-cap and a shutter. The flap is raised by a long spiral spring; one end of which is held in the hand, while the other end is attached to the flap. By careful manipulation a brief exposure can be given to the sky (so as to secure clouds), or to one side of any object which is very unequally lighted.

3. *Shutter working in lens tube, usually in diaphragm slot.*—In a doublet or rectilinear lens—and this is the form most commonly employed in instantaneous photography—the beam of light which affects the plate is narrowest at or about the position of the diaphragm. The consequence is that a shutter in this position can cross the beam more rapidly than anywhere else; and this is a considerable advantage. The Grimston shutter—with which we have done much work—consists of a metal saddle riding upon the lens tube, and containing a thin flat piece of steel (fitting in adjustable steel sheath), which, by the motion of an adjustable spring, first rises in the diaphragm slot, and then falls, the motion being continuous and circular. This shutter can be set to five speeds (from the one-tenth to the one-sixtieth of a second), and it can also be used for "time" exposures. As the steel sheaths (which themselves serve the purpose of a diaphragm) are interchangeable, any size of diaphragm can be used; the regulation sizes supplied with the shutter are  $f/8$ ,  $f/12$ , and  $f/16$ . Such shutters should be securely tied down by a string passing round the lens-tube, as they have a tendency to rise out of the slot at each exposure. The main part is so light (sixty grains) that no vibration is produced.

But the best plan for shutters working between the lenses is to have a special and separate mount made for the lenses, such mount constituting an integral part of the shutter. Great care must then be taken that the centering of the lenses in the new mount is true. When required for instantaneous work the lenses are unscrewed from their own mount (which is thus never cut or interfered with) and screwed on to the shutter mount. The iris diaphragm can also be arranged to work almost in contact with the moving part of the shutter. The illumination of the plate by a shutter working in this position is very equal.

A point to be remembered with such a shutter as the "Grimston" is that the time of exposure is decreased (*i.e.*, the speed of the shutter is increased) by the substitution of smaller diaphragms. For the smaller the hole, the more rapidly it is uncovered and covered over again. At the



same time the "efficiency" of the shutter is increased, for the diaphragm remains fully open for a longer percentage of the total time of exposure.

Another shutter working in the diaphragm-slot is the *Waterloo*, made by E. G. Wood (fig. 2). It is worked by elastic bands.

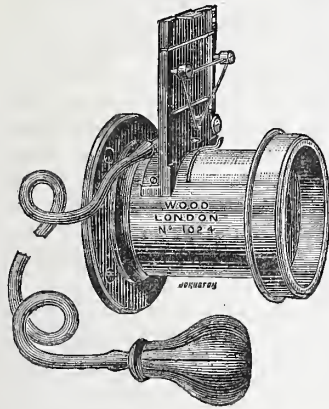


FIG. 2.

the moving parts of a certain shape, to cause a variation in the exposure given to the sky and to the foreground, and thus to easily secure clouds upon the same plate as the landscape.

A shutter in this position—behind the lens—can be used for portraiture with great advantage, being made to open inside the camera. Its action is then invisible, and the sitter can be taken without his knowledge of the exact moment of exposure. This assists greatly in securing a natural expression. Cadett's Studio, Newman's Studio, and Guerry's Flap are shutters which work well in this position (fig. 3).

(5) *Shutter within the camera.*

So far as we know, no shutter on the market occupies a position in or near the middle of the camera. And yet this point offers the advantage of stability; for it could be placed exactly over the tripod screw (which ought itself to be exactly beneath the centre of gravity of the whole camera); and the beam

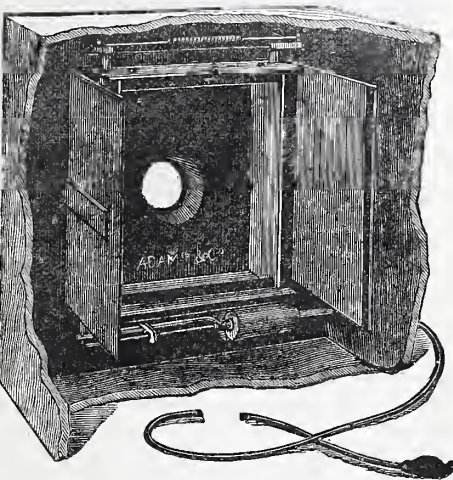


FIG. 3.

of light is not so expanded there as close to the plate. But this central position would involve the necessity of a central frame to the camera—like that usually seen in an enlarging camera—and so would add to the weight and bulk of the instrument.

(6) *Shutter placed in front of and close to the sensitive surface of the plate.* There is no doubt that this is, theoretically, the position for the shutter. The aperture in the shutter must be the full width or length of the plate; and as it travels along or across the plate it permits the full action of the light passing through the lens upon each part of the sensitive surface in turn. But this position involves two disadvantages. The first of these is its *bulk*, for the shutter frame must be as large as the back of the camera; the second is that there may be sufficient difference between the exposure of one part of the plate and another to cause a

distortion of the "moving object." Each portion of the object may be sharp, but the whole may be lengthened out, as in the case of a horse travelling in the same direction as the shutter-slit is moving. If the horse and the shutter were to move at the same rate, we should have the image of a section of the horse occupying the whole width of the plate. It would be an advantage, therefore, to have this shutter made reversible, so that the slit should always travel in the opposite direction to that of the object in motion.

**MOTOR POWER OF SHUTTERS.**—Shutters are usually caused to move in one or other of four ways:—(1) *By the force of gravity*—as in the ordinary drop-shutter. This has the disadvantage that it will only act downwards; but the speed can be slowed by slanting the shutter. (2) *By elastic bands*—These wear out rapidly, and are liable to get lost and to break; moreover, they are of very variable strength. (3) *By steel springs*—this is the method most generally adopted. These springs—and, indeed, all the working parts of the shutter—should be kept well oiled, a point which is too little attended to. (4) *Compressed air*—the compression being effected by the hand.

Often two or more of these motors are combined; thus a shutter is frequently *raised* by an elastic band, and then allowed to *fall* by the force of gravity. In Lancaster's pneumatic shutter the compressed air acts as the power in a lever of the third order, and raises the shutter, which is then brought down again by gravity, aided by a spring.

**"RELEASE" OF SHUTTER.**—Almost every shutter requires to be "set" before exposure. When so set it is in a state of tension, and it is prevented from moving by means of a "catch" of some form or other. To effect the exposure this catch must be released or set free. This is often done by a touch of the finger; but a better method is the compression of air within a hollow elastic ball, the force being transmitted along an india-rubber tube, and causing a piston at the other end to press upon the catch and effect its release. Or, instead of a piston, the expansion of air within a tiny bellows, or in a small elastic bag, produces the same effect.

With hand-cameras, however, when both hands are usually required to hold the instrument, the exposure is best effected by pressure upon a stud, or by pulling a string. It is possible to use the pneumatic release, by holding the ball or "pear" in the mouth; but in any case it makes the camera more conspicuous. For work with a camera upon a stand, however, the pneumatic release is far the best. The whole attention can then be concentrated upon the subject, and there is decidedly less danger of causing a vibration of the camera. The pneumatic "ball and tube" arrangement was, we believe, the patent of Mr. Cadett. Mr. Pumphrey, of Birmingham, filled the tube and ball with water instead of air, producing what he named the "Hydrostatic" shutter, which gave a similar effect.

Electricity can, of course, be used to effect the release of the shutter, but it is more expensive and troublesome than the simple pneumatic arrangement of Cadett, which is in general use at present.

When the person who makes the exposure desires to take his own portrait, or to form part of a group, the "Self-portrait" shutters sold by Messrs. Underwood and by Mr. Tylar will prove useful. They are very simple, consisting mainly of a simple "latch" shutter operated by a long black thread, one end of which is held in the hand, while the other end is fastened to the moving part of the shutter and passed over a small ring or pulley.

(To be continued.)



## The Lantern, and How to Use it.

By C. GOODWIN NORTON.

### CHAPTER VIII.

(Continued from page 82.)

ALL the foregoing carriers, except the first-mentioned of Mr. Hughes', can be used with any lantern.

The Terpuoscope, for unframed slides, gives the appearance of an opaque curtain descending on the screen each time the slide is changed. A framed slide, such as a chromatope, can be introduced by simply altering the

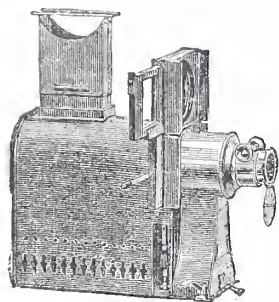


FIG. 16.

focus a little. But for simplicity of working there is nothing to beat the Metamorphoser, which

has two stages for slides, one above the other (fig. 16). Either of them can be moved to the front of the condenser, slowly or rapidly, by a lever. There is nothing to stick or go wrong. By fixing a shutter to the lever to obscure the light, the movement of changing is not seen. This lantern is made in Russian iron, also with

mahogany body, and can be used for an oil lamp or limelight. Messrs. Hughes' Pamphengos (fig. 17) has a world-wide reputation. It is handsome in appearance, convenient to use, as the stages are open all round, and the optical parts especially good.

The Sciopticon may be described as the father of mineral oil lanterns, all modern patterns having some of its original features, such as open stages without pillars, the whole of the front moving forward together, flat wicks instead of round, etc. Much care is taken with this lantern to see that the objective and condenser are suited to each other to secure the best result.

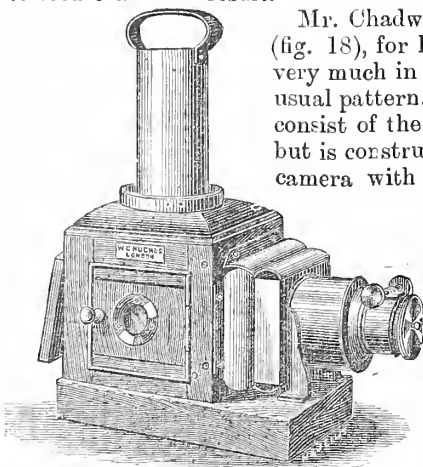


FIG. 17.

Mr. Chadwick's Perfect lantern (fig. 18), for limelight only, differs very much in appearance from the usual pattern. The front does not consist of the ordinary brass tube, but is constructed something like a camera with leather bellows between

lens and slide stage. The front board can have any lens with a flange screwed on to it. This is a great advantage to amateur photographers, as it enables them to use their photographic lenses, should they wish to do so for any

particular purpose, such as photo-enlarging, or for testing for flatness of field, as will be seen later on. The whole front extends to a length of 14 in., and closes to 2 in., so that lenses of any focal length can be used. The bellows can be quickly removed for the introduction of a sub-condenser or for scientific experiments. The Eclipse carrier, by Mr. Chadwick, is very simple and suitable for any single lantern; with it one slide can be substituted for another without the slightest movement on the screen being seen by the audience.

All single lanterns should be so arranged that the lamp can be inserted without removing the chimney. In all

cases be careful that the flame or the hot lamp does not get too near the condenser, or a fracture may result, which is especially annoying if the crack curls round and stops half the light. When exhibiting with a single lantern it is important to see that the light is properly placed with regard to the condenser, or a dark shadow will appear on the screen. With oil lamps this is generally done by the maker, though it is sometimes possible to improve on his work by moving the lamp a little. To explain how the limelight is to be centred would occupy too much space here. The operator will soon find where it ought to be placed by a few trials, the general rule being to move the light in the opposite direction to the darkest spot; thus if the shadow is on the right, move the light to the left, and *vice versa*; if the disc appear with a ragged coloured edge, move the light nearer the condenser; if a dark spot shows on the centre, move it back a little. The disc should show evenly bright all over. Before the centering is quite completed, a slide should be temporarily inserted and roughly focussed, to see that these adjustments are correct.

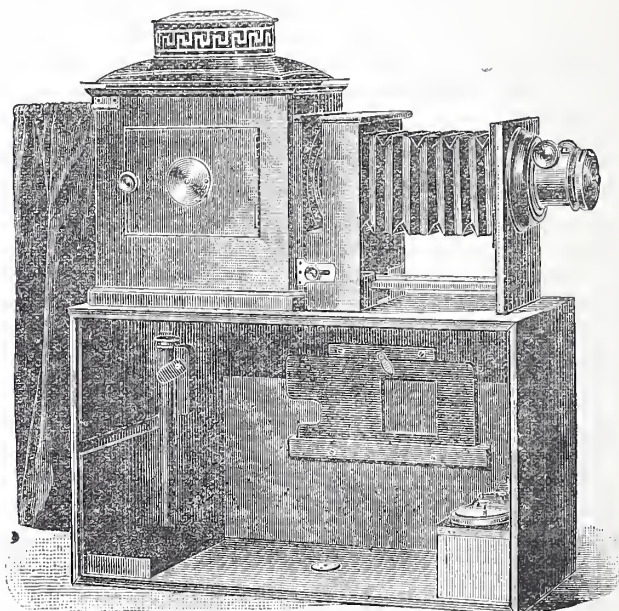


FIG. 18.

The actual working of a single lantern when once lit and focussed is so simple as to require little special instruction. The lime or lamp must be looked to occasionally, as previously shown, and whatever form of carrier is used care must be taken to insert the slide the right way. With a slide of the standard size,  $3\frac{1}{4}$  in.  $\times$   $3\frac{1}{4}$  in., there are eight ways of putting it in the carrier, of which only one is right. All slides should have two white spots at the top of the face or film side. When the slide is turned upside down, as all slides must be when put in the lantern, these two white spots should still be towards you; and, when in its place, next the condenser.

If landscapes be shown the wrong way round, the mistake is not always apparent, but if any printing or writing appears on the picture, the operator will soon see something is wrong. In the above direction it is assumed that the picture is on the screen. When shown through it the slide must still be placed upside down, but the face with the two spots must be farthest from the condenser.

With a double-sliding carrier always take out the slide already shown as soon as the other appears on the screen, and replace it with the next one. The slides that have been shown should be kept in their proper order in case one of them is required again.

The greatest care should be exercised to keep the picture



on the screen in focus. If this is not done, all the care and money spent on good slides and objectives is wasted.

Oil lamps should not be tilted, or some of the oil may escape and do damage. Besides this, the flame gets out of the centre of the chimney, and the light suffers.

Since the article on oil lamps was written, Stock's new four-wick lamp has been put on the market, and bids fair to eclipse the others. The wicks can be turned up to their full height at once, and the length of the chimney regulated by a rack and pinion to secure sufficient draught, thus avoiding smoke and smell; the reflector works on a new principle, and can be moved to its best position with respect to the condenser. (To be continued.)

## Quarterly Examinations in Photography.

**Question 4.**—What is the action of the swing-back on the picture?

**ANSWER.**—In photographing a high building it is sometimes necessary to tilt the camera, so as to get the whole of the picture on the focussing screen. On this being done it will be found that the sides of the building, which should be vertical, converge thus V. Now, by swinging the back so that the focussing screen becomes vertical with the plane of the building, the distortion of the convergence will have disappeared. In landscapes it is used to bring into one focus parts which lie on different planes, and therefore hazy or blurred when viewed on the ground-glass. Suppose the scene is rendered sharp everywhere but in the foreground, and it is observed that to make an effective picture the foreground must be well defined; the back must now be swung in the opposite direction to the former case, viz., from the top of the camera. The foreground and distance are now equally sharp.—STEPHANI.

**Question 5.**—Explain your own method of developing.

**ANSWER.**—I use the pyro and ammonia developer. The ammonia and bromide I make up into 10 per cent. solutions; the pyro I use dry. For a normal developer I make up, pyro 4 grs., ammonia solution 90 minims, bromide solution 50 minims; make up to 2 oz. with water for half-plate (Ilford ordinary).

Before making up developer I consult my note book to see subject, exposure, etc. If it requires the normal developer, I commence by making up developer with pyro 3 or 4 gr., two-thirds normal quantity of ammonia, and all bromide, and add ammonia as required, from dropping bottle. If I wish to decrease contrast, I keep the pyro and bromide down, using, say, one-fourth normal quantity of pyro and one-half bromide, ammonia full normal quantity. To increase contrast, I restrain with plenty of bromide, full quantity, or more of pyro and less ammonia, using, say, pyro full quantity, ammonia two-thirds, and bromide double quantity. For an under-exposed plate I make up pyro one-fourth or one-third, ammonia half as much again, bromide one-half.

For an over-exposed plate I make up, pyro full amount, ammonia one-half, bromide double quantity. After developing, I wash and clear in a 10 per cent. solution of chrome alum, wash again, and fix in hypo 4 or 5 oz., water 1 pint, then wash again for an hour.—BAS.

**Question 6.**—What are the characteristics of an under-exposed and an over-exposed negative?

**ANSWER.**—The characteristics of an under-exposed negative are: Thinness, without detail in the shadows, dense high lights when over-developed, and very little half-tone. An over-exposed negative is thin and flat, but full of detail, with no high lights, and deep shadows, and veiled over with general fog when very much over-exposed.—BAS.

**Question 7.**—Pyro and soda development frequently gives a deep yellow stain. How would you remove this, and is it prejudicial in printing?

**ANSWER.**—The yellow pyro-soda stain may be removed by soaking in the following solution:—

|             |     |     |     |       |
|-------------|-----|-----|-----|-------|
| Chrome alum | ... | ... | ... | 1 oz. |
| Citric acid | ... | ... | ... | 1 "   |
| Water       | ... | ... | ... | 20 "  |

for a few minutes. This clearing solution brightens up the negative, and makes it print much more quickly. Another, and I think better way is to fix the negative in the acid fixing bath as below:

|                         |     |     |     |                 |
|-------------------------|-----|-----|-----|-----------------|
| Sodium sulphite         | ... | ... | ... | 1 oz.           |
| Tartaric or citric acid | ... | ... | ... | $\frac{1}{2}$ " |
| Water                   | ... | ... | ... | 4 "             |

Dissoive the sulphite in 3 oz. of water, and the acid in the remainder, and add to the sulphite solution. This should be added to

|                      |     |     |     |       |
|----------------------|-----|-----|-----|-------|
| Hyposulphite of soda | ... | ... | ... | 6 oz. |
| Water                | ... | ... | ... | 30 "  |

This bath clears the negative and also hardens the film.

A yellow negative is practically a negative devoid of the lower part of the scale of illumination—for the yellow stain cuts off much of the actinic value of the light in printing, and protracts that operation most inordinately, and a negative yellow in the shadows will hardly ever yield a good print in platinotype. But if the negative be thin, and the stain extends uniformly over the negative, it is a positive advantage, giving a much more plucky print than if it were cleared.—BROM.

**Question 8.**—Give formula for mercurial intensification, containing cyanide of silver. State who first suggested it, and any possible dangers in using it.

**ANSWER.**—The following formula by Captain Abney is a modification of Dr. Monckhoven's method.

|                   |     |     |     |         |
|-------------------|-----|-----|-----|---------|
| No. 1.            |     |     |     |         |
| Mercuric chloride | ... | ... | ... | 100 gr. |
| Potassium bromide | ... | ... | ... | 100 "   |
| Water             | ... | ... | ... | 10 oz.  |

|                |     |     |     |         |
|----------------|-----|-----|-----|---------|
| No. 2.         |     |     |     |         |
| Silver nitrate | ... | ... | ... | 100 gr. |
| Water          | ... | ... | ... | 10 oz.  |

To No. 2 add a solution of potass. cyanide (100 gr. to each oz. of water), which will cause a precipitate. The cyanide must be added gradually, and with agitation. After a time the precipitate will redissolve, and the cyanide must be added until only a very little of it is left undissolved.

To use the above, the negative must first be freed from all traces of hypo, and then placed in No. 1 solution until bleached through. Wash carefully, and place in solution No. 2, until blackened through, and again wash.

The dangers which may arise are twofold—first, with regard to the user, and secondly with regard to the negative.

*The user.* As the mercury and the cyanide are both virulent poisons, great care is necessary.

*The plate.* Unless carefully freed from hypo, stains are likely to occur, also if not well washed between bleaching and darkening. Another danger is the want of permanence of all negatives intensified by the use of mercury.—SENR.

**Question 9.**—How would you choose a printing process?

**ANSWER.**—The golden rule to be followed in choosing a printing process is "suit your process to your negative." Some negatives which would be perfectly useless for silver printing may be made to yield good prints on bromide paper. Very sharp, bright, crisp negatives with considerable density and contrast are best suited for platinotype printing. If very thin, then bromide will give the best results. Negatives which take up a position about midway between the two are best suited for silver printing. To make a still further distinction, Kallotype may be used in place of bromide and silver. Gelatino-chloride papers are very serviceable for all classes of negatives, except such as possess great contrast. SENR.

### QUESTIONS.

16.—State the principles involved in the production of a Collotype print.

17.—Forward a matt-surface print toned to a deep purple tone.

18.—Give the leading lines of a short essay on photography suitable for delivery to a mixed audience of photographers and the general public.

*Latest Day for Answers, February 22nd.*

19.—Forward a plate exposed on a landscape, stating the subject, light, etc., bearing in mind that artistic taste will score well

20.—What is the process giving the most permanent prints?

21.—Explain the arrangements necessary for enlarging by daylight.

*Latest Day for Answers, February 29th.*

### RULES.

1. Answers must be received on the date stated each week in the AMATEUR PHOTOGRAPHER.

2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A *nom de plume* may be used, and must follow every answer, and be affixed to every specimen of practical work.

4. Answers are not limited in length, but preference will be given to concise answers without unnecessary amplification.

5. Those desirous of competing must apply to have their names entered. As these examinations are intended to encourage the study of the theory and practice of photography, authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

6. Past successful candidates will not be allowed to compete.

**NOTE.**—No information of any kind will be given to competitors, and nothing but the answers must be included for the examiners. All other communications must be addressed to the Editor.

Marks will be given for all answers, and, when possible, the best three answers will be published. The answer will not be published till the week following receipt of the same, and the examiners criticise each answer sent in, and when no satisfactory answer is received, will supply one. Three prizes will be awarded at the end of each quarter. (Full syllabus on application.)

All communications to be addressed to—"EXAMINATION DEPARTMENT," AMATEUR PHOTOGRAPHER, 1, CREED LANE, LONDON, E.C.



## Reviews.

*Guide: Pratique pour l'Emploi des Surfaces Orthochromatiques; leur Application à la Photographie des Objets Colorés.* By L. Mathet, published by the Société Générale d'Editions, 24, Boulevard Saint Germain, Paris. Price 3 fr. 50.

M. Mathet is always a careful and practical writer, and therefore we are pleased to receive a copy of this his latest work, on the practice of orthochromatic photography. We regret to note, however, in the opening chapter that in the historical notes on the subject he totally ignores the invaluable work of Vogel, Eder, Schumann, Abney, and others; in fact, patriotism seems to have blinded him to the existence of any worker but Becquerel, Ducos Du Hauron, and Attout Tailfer, all of whom have undoubtedly done good work, but we venture to suggest that the German and English schools merit a brief note. Very clear and good advice is given on the choice of coloured screens, and four illustrations are included showing the difference between the ordinary plate and the colour-sensitive; but here again we have the same fault to find as was noted in a previous review of a German work on the same subject. In the first instance the picture is a panoramic view of a town with hills in a background; on the ordinary plate these hills are dim and indistinct, whilst with the orthochromatic plate the use of a screen has brought them up sharp, distinct, and clear, thus destroying to a great extent the idea of distance. It is quite true that the atmospheric effect in the first instance may be exaggerated, and in the second case it is undoubtedly exaggerated in the opposite way. In the second case, at least, the lens has been raised so as to cut off an inch of foreground. These little slips give adherents of the ordinary plates, or rather, we should say, opponents of the colour-sensitive plates, very good opportunities to find fault of undue favouritism, which they are not slow to take advantage of. The work is divided into seven chapters, treating in an exceedingly practical manner of the comparison between orthochromatic and ordinary plates, precautions to be taken in using these plates and the lighting of the dark room, the different sorts of screens and their preparation, the dyes and the method of using them, the rendering of the colour values and the estimation of the same, working colour-sensitive plates, and their development.

Though of only eighty-five pages, the work forms a clear exposition of the practical working of colour-sensitive plates for ordinary work.

*Burton's Modern Photography.* By W. K. Burton, C.E. Tenth edition; published by Piper and Carter, 5, Fumival Street, Holton, E.C. Price 1s.

In the preface to this edition, the publishers state that in consequence of the unprecedented demand, they have been obliged to go to press without the revision by the author. Practically, however, it is little more than a year since the previous edition was partly rewritten by the author. We regret that this well-known little work could not be revised, because so many new things and details in practice have cropped up within the last year, that one misses them from Mr. Burton's well known little handbook, which has long been held in high estimation by practical workers.

*The Ilford Manual of Photography.* By C. H. Bothamley. Published by The Britannia Works Company, Limited, Ilford, London.

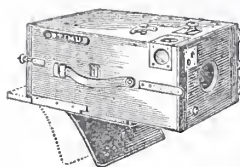
A cleverly written handbook for the practice of photography, which is as complete as necessary for an elementary work. It is singularly free from errors as was to have been expected, and the only point we take objection to is a paragraph on page 93. When speaking of toning bromide prints, Mr. Bothamley says, "If the print is not thoroughly washed after fixing, uranium ferrocyanide will be deposited all over the surface, and the print will be stained. Treatment with alum not only hardens the gelatine, but also destroys any traces of hypo that may be left in the paper, and thus lessens the risk of staining." Practically the words in italics by inference recommend the use of alum as a hypo eliminator. The book is well printed, and contains some useful tables and a list of dealers and dark-rooms.

A fire occurred on the premises of Messrs. Parry and Co., photographers and sensitised plate manufacturers, in Renshaw Street, Liverpool, on Saturday evening. Thousands of people were quickly attracted to the spot. The outbreak was quickly suppressed by the prompt and active fire brigade from Hatton-garden.

## Apparatus.

## THE "OPTIMUS" NOVELTIES.

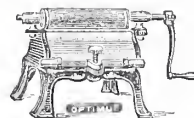
Messrs. Peiken, Son, and Rayment, of 99, Hatton Garden, London, E.C., have submitted to our notice three novelties they are now placing upon the market. The



"Minimus" hand-camera is a neat little polished mahogany box measuring 8 by 3½ by 5 in., carrying twelve quarter-plates, each of which is automatically brought up to register and then transferred to the back of the pile by sliding into the little opaque bag

at the bottom, and the plate is by means of this transferred to the back of the camera, a register indicating the number of plate ready for exposure. It is fitted with a special safety shutter, focusing adjustment, and view finder, and a curtain shutter giving slow or rapid exposures, and has an Optimus Euryscope lens, working at  $f/6$ . The camera strikes us as being an extremely neat and efficient little instrument. Price £7 7s.

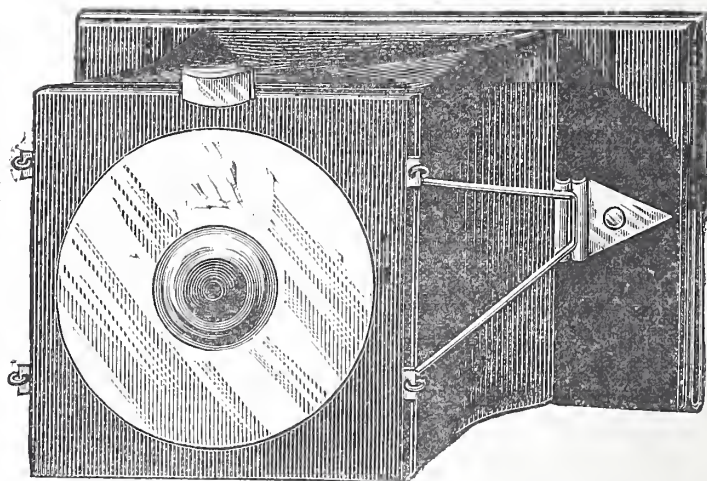
We also examined a special cheap set called the "Economic," consisting of well-made camera, dark-slide, rapid rectilinear lens, shutter and tripod complete with waterproof case, which is a strong, serviceable set capable of turning out good work. Price £5 10s. for half-plate.



The "Optimus" burnisher is also shown in the accompanying cut, is well made, and equal to any amount of hard work and wear and tear, and should find many friends at the low price of 25s. for half-plate size.

## THE PURSE CAMERA.

Messrs. Dollond and Co., of 35, Ludgate Hill, and 62, Old Broad Street, have left with us for notice a neat little novelty in the shape of the above. Externally we have a very dainty looking purse which any lady might envy us the possession of, and part of the interior is actually set apart for ordinary purposes,



but a special pocket contains a little folding camera with fixed-focus lens which takes one inch square pictures. A safety shutter is provided, and exposure can be made by means of this or by the aid of the finger. The novelty may entice some of our readers to invest a few shillings in the purchase of a good purse for a lady friend, whilst the camera will be useful for special work.

**East Southsea.**—On the 9th inst. a practical demonstration in bromide enlarging by artificial light was given by the Hon. Secretary and Treasurer. By the aid of a four-wick lantern, two 12 by 10 enlargements were made from quarter-plate negatives on Ilford rough-surface paper, with very satisfactory results. A sub-committee was appointed to make arrangements, etc., for exhibition, on February 16th, of the 1891 AMATEUR PHOTOGRAPHER Prize Slides, kindly lent by the Editor.



## Exhibitions.

### MALTA CAMERA CLUB.

THE first photographic exhibition ever organised in Malta was held a few days ago in a room at the Public Library in Valetta, and attracted a good deal of attention, not merely from those interested in the art but also from the general public.

Although the Malta Camera Club has only been in existence a couple of years, it has already done much to promote photography in the island, and can boast of having some very clever amateurs amongst its members.

The exhibition was under the patronage of H. E. the Governor and Lady Smyth, and was visited by them the day before it was opened to the general public. There was no charge for admission on either of the days it was open, and the room was thronged from morning to night.

The exhibition comprised bromide prints and enlargements, silver prints, and a few platinotypes, about four dozen lantern slides, and half-a-dozen transparencies. The bromide prints and enlargements were generally very good, especially those shown by Mr. C. Millard, the energetic Hon. Secretary of the club. All his work bears evidence of extreme care, and some of his views, notably his "Interior of St. John's Church, Valetta," and his "Monuments" in the same church, could not well be better. His reproductions of some of the old paintings, frescoes, and mosaics in the Governor's Palace are remarkably sharp and clear, considering how indistinct and badly lighted the originals are. This kind of work is not often successful, but Mr. Millard's reproductions show what can be done by careful timing of the exposure and skilful manipulation in the development. On seeing his views we were not surprised to hear that he has recently been awarded a medal at one of the international photographic exhibitions.

There were twenty-three exhibitors in all, some Maltese amateurs showing first-rate specimens both of silver printing and of bromide work.

The slides were of varying quality, some were very good, but, as well as one could judge without passing them through the lantern, a few of them were lacking in vigour. Captain Swainton Holland, R.N., showed three slides reproduced from instantaneous photographs of a torpedo moving at the rate of 45 ft. a second on its flight between the point of discharge and the sea. These three slides, we believe, are unique. The silver prints were good on the whole; those by Mr. C. W. A. Rosser, a young amateur, we were very pleased with, especially his view of "The Lion Rock at Cheddar." There were some interesting "Indian Scenes" from paper negatives, which one could hardly have told from prints from glass negatives, as the grain of the paper scarcely showed at all. They were exhibited by Captain Chawner, and do him great credit. Captain Price, late R. N., had some charming studies of "Scenes in North Italy," half-plate silver prints, which left nothing to be desired. Mr. Gibson Sugars showed some good views of Taormina, in Sicily, and of Barbados.

In all there were some three hundred photographs exhibited, and we only wish we had space to speak of them more in detail. It is proposed, we hear, to hold these exhibitions once a year, and the success of the present one ought to encourage its promoters to further exertions in the cause of photography in the future.

### MANCHESTER AMATEUR PHOTOGRAPHIC SOCIETY.

The annual exhibition of this Society, which has a membership of over 400, was held on Tuesday last, the 9th inst., at the Athenæum, and remained open the four following days. In the number of works exhibited there is a decided advance on former years, and the quality will bear comparison with that shown at any previous exhibition.

The society has lately purchased an enlarging lantern for the use of its members, and has made arrangements by which some prominent member of the Council or of the general body of members attend each evening for five nights a week and assist those occupied in the various processes connected with enlarging. The way in which the lantern has been used is shown by the very large number of framed enlargements exhibited; nearly one-half of the entire exhibits being bromides of this class.

There is an almost entire absence of albumen prints, and the glossy surface is also less conspicuous than formerly. These

latter are replaced by matt-surface prints on one or other of the gelatino-chloride papers now becoming so popular, which, from an artistic point of view, is a decided step in advance.

The toning of bromides does not seem to have found much favour with the members, not a single example, so far as we are aware, appearing on the walls.

There are a few notable examples on the new Ilford paper toned to a warm brown, which are very effective. More work of this class would be a decided improvement. The hand-camera exhibits are hardly so numerous as last year, and are only seen to advantage when shown as lantern slides.

The survey of Manchester, undertaken by the Society, is not in evidence in the exhibition. We hope, however, this will not be allowed to fall through, as we are of opinion that it should be brought to a satisfactory conclusion.

The large "three decker" lantern belonging to the Society contributed largely to the success of the exhibition, demonstrations being given each evening by its aid. On Tuesday the lecture was entitled "Pictorial Selections by Members," delivered by Mr. J. W. Wade, the President, who opened by giving a short and interesting address on "Art in Photography;" Mr. J. Davenport manipulating the lantern. On Wednesday Mr. J. G. Jones was in charge of the light, and two lectures were given, the first by Mr. T. Widdop, Hon. Secretary of the Oldham Society, entitled "Holiday Reminiscences of Northern Italy," and the second by Mr. J. T. Lees, President of the Dukinfield Society, on "Monte Carlo and other Resorts on the Riviera." On Thursday the Rev. H. J. Palmer, M.A., lectured on "A Tour to the Bernese Oberland;" Mr. J. Bathe in charge of the lantern. On Friday two lectures, "Holidays at Home and Abroad," by Mr. Wade, and "Rustic and Riverside Pictures," by Mr. Davenport; the lantern on this occasion being manipulated by Mr. F. W. Parrott. On Saturday a continuation of members' work brought a successful week's lantern work to a close. The attendance on each occasion was all that could be desired.

A word of praise is due to the Hon. Secretary, Mr. Randolph Gilmore, for his untiring efforts to make the exhibition a success. That he succeeded is beyond all doubt.



**Blackheath.**—Ordinary meeting on 9th inst., Dr. Ernest Clarke, a Vice-President, in the chair. Lecture by the President, Mr. W. H. M. Christie (Astronomer-Royal), on "Photography as Applied to Astronomical Observations," illustrated by lantern slides, displayed on the screen by an oxy-hydrogen light biennial lantern, manipulated by the Rev. H. P. Macdonald. After explaining that previous to the invention of photography the various observations of the heavenly bodies were recorded by drawings, the lecturer proceeded to describe a spectroscopic instrument now used for the purpose. In action and appearance this much resembles a telescope, combining in addition the elements of a camera, and fitted with a doublet lens, showing a magnified image of either four or eight inch diameter. Previous to the invention of the pneumatic shutter, when very rapid exposures were required, a shutter having a narrow slit of about one-fiftieth part of an inch in it, and held in position by a spring, was released by cutting a string at the critical moment. For obtaining photographs of the sun, an exposure of some thousandths part of a second, together with the use of a very slow plate, were necessary. The introduction of gelatine dry-plates had proved an advantage, for although the results when obtained with the wet plates were satisfactory enough, exposures had sometimes been lost by reason of clouds coming over the object while the plates were being prepared. The development under the old wet-plate process had usually been with pyro, while hydroquinone gave satisfactory results with the present dry plate. Photographs showing masses of luminous matter, known as sun spots, darkest in the centre, and heaped up with feeble all round, supposed to represent a higher elevation, and connected by bridges, as it were, of intense brilliancy, rotating in equatorial motion across the face of the sun, were thrown on the screen, while other pictures were exhibited of the stars which required such prolonged exposure that an instrument had been constructed with great ingenuity to move with them at absolutely the same rate. Illustrations of the new star in Auriga, whose advent was foretold by an anonymous post-card, and which is attracting so much attention just now, as well as the two very bright planets Venus and Jupiter, that were visible in the western horizon on the 5th and 6th inst., in phenomenal proximity to one another, proved of special interest to the meeting, and some amusement was caused by the last slide, which represented how a star which really appeared quite round in the telescope was made to represent the conventional idea, namely, by masking it with a disc having seven angles in it. A discussion followed.



## Societies' Meetings.

**Brighton.**—Annual meeting, February 11th, the President in the chair, the report and balance-sheet were passed, and the meeting adjourned to February 23rd, to consider the deficiency. The awards in the competitions were announced. Classes 4 and 5 had been judged by Mr. Geo. Davison, of the Camera Club, and Class 1 by Mr. A. R. Dresser. Class 4, for the best set of prints from negatives taken during the year: silver medal, J. Hunter Graham; bronze medal, A. H. C. Corder; certificate, J. Williamson. Class 5, for the best set of six prints on Hardcastle's platinum paper: J. Hunter Graham, silver medal. Class 1, for the best enlargement: silver, J. Hunter Graham; bronze, Dr. Harrison. The tables were covered with the prints sent in, which were also hung on screens, etc. The work in Classes 4 and 5 was considered by the judge to be of very good quality.

**Bristol.**—On February 12th, the President in the chair, the Secretary distributed some samples sent by the Eastman Company of their rapid bromide paper. They also sent a neat and well got up souvenir of the Washington Eleventh Annual Convention. After some discussion about the local photographic survey, members went up to the smoking-room, where Mr. Harvey Barton gave a lecture explaining his new apparatus for flashlight portraiture. The prints shown were very soft and good. An adjournment was then made to Mr. Barton's studio, specially fitted up for flashlight work, and some half-dozen plates exposed on different people present were afterwards developed, and turned out perfect negatives. Mr. Barton uses eight flash lamps (connected by piping with bellows), placed ten or twelve feet from the ground, muslin curtains being placed between the sitter and the lights;  $\frac{1}{2}$  gr. magnesium powder is burnt in each lamp at each discharge, the lamps holding sufficient for a number of exposures.

**Camera Club.**—On Thursday, February 11th, Commander C. E. Gladstone, R.N., gave a lecture on "Architecture in Normandy and Brittany." Sir George R. Prescott, Bart., occupied the chair. Previous to the lecture, Mr. Maskell handed round a Torsioscope, lent by Messrs. Adams and Co., an instrument devised to show eccentric distortions of portraits, and the Hon. Secretary exhibited some novelties in shutters sent by the Thornton-Pickard Manufacturing Company. Commander Gladstone's lecture consisted of an able exposition of the leading beauties and features of church and domestic architecture in Normandy and Brittany. Each point was illustrated by lantern slides of very high quality. The history and growth of art in architecture in these countries was described, and a comparison between French and English styles and details instituted.

**Chester.**—The third meeting of the winter session was held on the 11th inst., and was well attended. After the Secretary had called attention to the samples of bromide paper sent for distribution among the members by the Eastman Company, and explained the working of two new shutters, submitted for inspection by the Thornton-Pickard Company, the AMATEUR PHOTOGRAPHER 1891 Prize Lantern Slides were in succession thrown on the screen. Many of the slides being of great artistic merit evoked hearty applause from the audience.

**Cornish Camera.**—Meeting on the 9th inst. A large number of views contributed to the AMATEUR PHOTOGRAPHER Monthly Competition of December were kindly lent by the Editor, and the majority of them greatly admired by those present. After inspecting the pictures, Mr. H. Tonkin, Hon. Secretary, gave a demonstration of print toning, which proved most interesting to the members.

**Coventry.**—At a meeting held on the 10th inst., the American lantern-slides, taken by the members of the Boston Camera Club, and circulated amongst the societies of this country through the medium of the Liverpool Amateur Photographic Society, and entitled "The White Mountains of New Hampshire," were exhibited by limelight. The views were typical of the picturesqueness of the American scenery. The mountain roads and waterfalls were grand. Mr. W. F. J. Orton and the Rev. H. Stanley Mercer read the descriptive lecture, which made the fine views very interesting to a large and appreciative number of ladies and gentlemen, members and their friends, who were present. The lantern was manipulated by the Secretary, T. W. Owen, assisted by F. J. Harker.

**Crewe.**—On the 8th inst., in the Brown Street Lecture Hall, the members, together with a large company of invited friends, enjoyed a very pleasant and most interesting evening, having a limelight exhibition of the AMATEUR PHOTOGRAPHER Photographic Slides for 1891. Mr. W. Eardley, Vice-President, presided. The President (Rev. W. G. Rainsford, D.D.) manipulated the lantern, and the Secretary (Mr. T. Gorrell) explained the pictures. The subjects were very varied and extensive, each class being very well represented by excellent work of bronze, silver, and gold medal merit. Many of the pictures were very warmly appreciated; especially the castles, abbeys, Eaton and Moreton Halls, whilst the interiors in many were considered to be wonderful productions. The Chairman

made a few observations on the art and work of photography and upon the excellent results before them that evening, hoping they would encourage and stimulate the members to lantern-slide making, adding that he would offer a prize, which was warmly applauded.

**Derby.**—The usual monthly meeting was held on the 9th inst. A quantity of sample packets of Eastman's bromide paper was distributed. Mr. A. H. Bennett moved an alteration in one of the rules, which now reads, "One Vice-President, instead of three as formerly." Mr. Keene showed a new tripod head, by which it is possible to tilt the camera without altering the leg. The same gentleman also exhibited a lantern (limelight) which is very compact. Mr. Smith showed and described a new shutter of his own invention which opens from the centre, and practically causes no vibration. Mr. Riley also passed round a negative which he had reproduced by the powder process, and which he said was very useful to Collotype workers. The Thornton-Pickard Company sent specimens of their time and instantaneous shutters, which were much appreciated. It was also proposed to hold a public exhibition of members' work and conversazione some time in November. This proposition met with great success, and steps will now be taken to make the necessary arrangements.

**Douglas.**—A meeting was held on the 9th inst., and a paper was read by the President Mr. J. M. Nicholson, entitled "The Intractability of Photography." He illustrated his remarks by photographs of the solar spectrum, engravings, drawings, and prints, for the purpose of showing the falseness of the photograph in rendering the tones of nature, and a most interesting evening was brought to a close by criticising two frames of hand-camera pictures by Mr. Nicholson, one set of which was awarded the bronze medal at Leeds.

**East London.**—Ordinary meeting, February 9th, Mr. C. Tyler, Vice-President, in the chair. Messrs. Harvey and Barber were elected as members. In accordance with a proposition by Mr. Sedgwick, which was carried unanimously, it was decided that one hour previous to each ordinary meeting should be devoted to instructing juniors. Several questions from the question-box were read and discussed. The remainder of the evening was devoted to the exhibition of lantern slides by the following members: Messrs. Gould, Sedgwick, Pasco, Uffindell, Green, Child, and Dr. Warwick. The lantern used was the property of Mr. W. R. Gould, and was admirably manipulated by him, each member describing his own slides.

**Exeter.**—The second meeting was held on the 9th inst., the President (J. L. Mackrell) in the chair. Mr. T. E. C. Wilson exhibited his newly-invented hand-camera, and, after explaining its working, passed round some fine specimens of work done by it. A practical demonstration followed, on "Silver Printing Processes," matt and enamel surfaces, by J. H. Welch, who dealt with the subject in his usual masterly manner, giving numerous bits of advice and tips for the manipulation of the prints. Some Alpha prints and a fine half-plate transparency developed by Rodinal, together with some prints of Mr. H. Holts, were very much admired.

**Faversham.**—At a Committee meeting of this Society held on the 10th inst., the rules and conditions of the next annual exhibition were drawn up. There are to be six classes open to members of the Society, and a special class for non-members residing within the radius of the Faversham Union. Besides first and second class certificates which will be awarded in each of the six classes, special prizes are to be offered by the President (the Right Hon. Viscount Thrawley) and by the Vice-Presidents (Captain Hooper, Dr. Evers, and Mr. W. C. Stunt). A new feature is a prize offered by the Society to the value of £1 to amateur photographers (non-members of the Society) for the best four photographs irrespective of class.

**Guildford.**—The ordinary monthly meeting was held on the 8th inst., the attraction of the evening being the exhibition of the American slides. There was a very good attendance, and the slides were much admired.

**Hackney.**—Mr. J. Hubert (Vice-President) in the chair. Samples of the Eastman rapid bromide paper were distributed. Mr. Hepworth delivered a most interesting lecture on "Illustrated Journalism." It was an exceedingly difficult subject, ably demonstrated, and was highly appreciated by the members present. Introducing the audience to a "rag shop," in an amusing manner he proceeded to trace the manufacture of paper from that source to the point where its ragged appearance is changed to the elaborate clothing of spotless material, suitable to receive the valuable imprints and articles of such leading papers as the *Graphic*, *Daily Telegraph*, etc. The lecturer contrasted the methods of ancient and modern newspaper illustrations in a striking manner, which elicited frequent applause. The photographs taken personally by Mr. Hepworth, included one where the stoppage of the machinery for that purpose occasioned the loss of three pounds, though it lasted only a few minutes. The different stages of preparing the drawings, often from the scantiest materials possible, such as a few lines with marginal notes to indicate crowds, trees, etc., were developed truthfully into the beautiful pictures produced in first-class journals. The



subject was specially interesting to photographers, inasmuch as it taught them to what extent photography has replaced the crude methods of the past.

**Holborn.**—At a meeting on the 12th inst., Mr. West in the chair, Mr. Ernest Benest gave a lecture on "Toning Bromide Prints." During course of same he remarked that one of the great drawbacks of uranium toning was to get rid of the yellow stain caused by the potassium ferrocyanide. He had tried Mr. Haddon's suggestion to make the washing waters acid; this undoubtedly prevents the dissolving away the uranium deposit and the stain. He stated that he had made a number of experiments with various reagents in order to try to dissolve away the stain without dissolving the uranium deposit, but without success at present. He then demonstrated the removal of the stain with water made distinctly alkaline with sodium hydrate, rubbing same over print with a plug of cotton wool. This removed the stain, but at the same time reduced the tone, so that you had to overtone in order to compensate for this reduction. He also stated that it was better to tone, etc., in daylight, as you are more certain of seeing if the stain had been completely removed. Mr. Warren thought that the use of water made alkaline was a good one, but he very much doubted the permanence of uranium toned prints. He thought that if the silver which had been converted to the ferrocyanide of silver were removed it would be an improvement in the way of permanence. Mr. Golding had tried Fry's solution for toning, and did not have any difficulty to get rid of the stain; he had also obtained some very pleasing tones on lantern plates.

**Huddersfield.**—On the 11th inst. those members who practise stereoscopic photography gave an exhibition of their work. Several stereoscopes were placed on the table, Mr. G. H. Charlesworth exhibiting one which he had just made. Most of the slides shown were transparencies. Amongst the exhibitors were the following gentlemen: Messrs. W. H. Charlesworth, G. H. Charlesworth, A. Clarke, H. J. Young, S. Sykes, and the Secretary.

**Ipswich.**—The annual meeting was held on the 10th inst., Mr. J. D. Piper, the President of the Society, took the chair. The Secretary (Mr. Leonard Hill) read the report of the Committee for 1891, showing that the Society was steadily increasing in numbers and financial strength. The meeting then proceeded to the election of officers. Mr. J. D. Piper was unanimously re-elected President, Messrs. Myddleton-Gavey and E. Edwards Vice-Presidents, Mr. D. R. Pringle, Hon. Vice-President, Mr. E. Edwards Auditor, and Mr. L. Hill Secretary. The following gentlemen were elected on the Committee:—Messrs. Corder, Curtis, Greenwood, Joslin, Penraven, Staddon, Wiggin, and Woolnough.

**Kendal.**—The February meeting of this section was held in the Museum Library, on the 10th inst., Mr. Isaac Braithwaite presiding. A diary of a holiday in Brittany, profusely illustrated with bromide prints, was kindly lent for inspection by Mr. A. R. Dresser, to whom a vote of thanks was cordially passed. Miss Agnes Wakefield was elected a member of the section. The business of the evening was a paper and demonstration of lantern slide making by the Autotype Company's permanent carbon process, by Mr. Frank P. Heath, who handled the subject in a thoroughly satisfactory manner. After reading his paper, giving a full account of the process, and the advantages and disadvantages of the same, Mr. Heath proceeded to develop and complete a number of lantern slides, which he afterwards exhibited in the lantern and compared with slides made by other processes.

**Lantern Society.**—At a meeting on the 8th inst. Mr. G. R. Baker read a paper on "Dissolving Views, and how to Exhibit them," and commenced by speaking of the early history of dissolving views, and showed how the registration of the slides was then effected. He then explained the method of preparing slides for effects, and showed the most recent arrangement for obtaining accurate registration, at the same time pointing out the difficulties that have to be overcome to obtain a satisfactory result. A number of slides were then thrown on the screen, showing how effects could be obtained by two or three lanterns, the use and management of the tinter, the rolling curtain, and various methods of dissolving and changing slides. Photographs of Sir David Salomon's beautiful lantern were then exhibited, and the lecturer pointed out the various adjustments that had been introduced to get as near perfection as possible. At the conclusion of the paper a number of high-class hand-painted slides and effects were shown with the triple lantern.

**Leicester.**—Regular meeting on the 10th inst. Four members balloted for and elected; one member proposed. Proposal from Birmingham society to join this society for a summer excursion cordially received; Mr. Bankart entrusted with arrangements. Mr. Pierpoint, President, offered silver and bronze medals for best six slides to be competed for at March meeting. Mr. Porritt read a paper on "Some Simple Rules to be Observed with a View to Making our Photographic Pictures more Artistic."

**Manchester.**—The annual exhibition of the work of members was opened on the 9th inst., in the lecture hall of the Athenæum,

Princess Street. The organisation has kept pace with the progress in the photographic art, not only with respect to its strength, which is, of course, a source of even greater congratulation. A year ago the membership was 323, it is now 408. At the last exhibition the number of photographs exhibited was under 800, in the present collection there were nearly 1,200. Gentlemen who twelve months ago inspected the pictures on view with any degree of care will now observe an advance in the artistic merit of the pictures. The subjects they illustrate are as widely different as any collection of paintings, though, as sometimes happens, the section devoted to inland scenery preponderates. The number of figure photographs is remarkably few, but it is to be remembered in this connection that amateurs as a rule have not the accessories which a studio includes. The feature of the exhibition is the number of enlargements, almost all of which have been made at the society's rooms. These pictures are of uniform excellence. The first of a series of lantern exhibitions of members' work was given on the same evening in the presence of a large audience.

**Munster.**—On 10th inst. the usual bi-monthly meeting took place, Major Lysaght, President, in the chair, when Mr. Baker read a paper on "Hand-cameras," a number of which were exhibited, including the Kodak, Radial, Ideal, Facile, Marion's Metal, Lancaster's Rover, Shew's Eclipse, and Rouch's. There were also a good many home-made cameras, some of which were exceedingly ingenious. A number of members joined in the discussion, which was animated and most interesting. Mr. Mahony, J.P., gave his experience of the "Kodak," which he praised highly, and several others also had other favourite types.

**Phot. Soc. of Ireland.**—The annual general meeting was held on the 12th inst., Mr. George Mansfield, J.P., in the chair. Before the business of the annual general meeting was proceeded with, Mr. F. Clibborn, of the Liverpool Amateur Photographic Association, gave a most entertaining lecture of a tour in Italy, illustrated by a large number of slides from photographs taken by Mr. Geo. E. Thompson, of Liverpool. The ground covered was most extensive, and the views, which were very varied, were of the most artistic description, and it is not too much to say that the slides, as a series, were probably the best that have been put before the society since the advent of the bromide lantern plate.

**Preston.**—The subject announced for the meeting on 11th inst. was "Platinotype," but the member who had proposed to give the demonstration was suffering from the prevailing epidemic. In his absence Mr. Macintosh gave an interesting practical demonstration of lantern-slide making by contact. Sample packets of Eastman's bromide paper were distributed for trial purposes. Mr. R. M. Warden has resigned his position as joint-secretary of the Club.

**Putney.**—On 10th February, Dr. W. J. Sheppard in the chair, the Rev. L. Macdonald read a paper on "Lenses," the third of the series, before a well-attended meeting. Speaking chiefly on the principles of light, he described the action and construction of the various lenses in the market, single and double, narrow-angle, wide-angle, etc., pointing out the particular use of each variety. For general all-round use, he recommended a rapid rectilinear or rapid symmetrical, whose focal length was equal to one and a half times the length of the plate to be used. Some rough metal castings, finished castings, rough crown and flint glasses, polished glasses, and the complete finished lens, all kindly supplied by Messrs. Taylor, Taylor and Hobson, were passed round, and served to illustrate the lecturer's meaning. A discussion followed the paper. The American slides were then shown by means of Hughes "Pamphengos" lantern (lime-light), and with gratifying results. They were considered most excellent in every way. Samples of the Eastman extra rapid bromide paper were distributed at the close of the evening.

**Richmond.**—On the 12th inst., Mr. Cembrano, the President, in the chair, Mr. St. John Hunt showed and explained Roberts's hand-camera; Mr. Arthur Hunter a home-made apparatus for viewing lantern-slides; and Mr. Ramsey, some negatives and positives enlarged with Cresco-Fylma, and some by a process of his own discovery. Mr. Hodgkin then read a very interesting paper on "Photographing Pottery," explaining that he had taken up that branch of work at the request of his father, Mr. J. E. Hodgkin, who was bringing out a book on the inscriptions on early English pottery, with illustrations chiefly from his own valuable collection. For this purpose Mr. Hodgkin photographed some fifty or sixty pieces, most of them by lamplight, and his paper clearly explained his *modus operandi*. Edwards' Isochromatic plates were used. The reflection and distribution of light varied to suit each subject, and exposures of varying duration up to four hours were given. A paraffin lamp with ground-glass globe was the principal source of light, a candle being placed as near as possible to the object to bring out the highest light at the proper point. The required negative having been obtained, a silver print was sent to a firm in Vienna for reproduction by photo-mechanical process. Specimens of negatives and prints were handed round, and showed how successfully Mr. Hodgkin



had carried out his difficult task. One of the process blocks was also shown, and a proof copy of the book, which is doubtless destined to become one of the standard works on ceramics.

**Stockton.**—The annual meeting was held on the 9th inst., Mr. J. H. Jackson in the chair, when the Treasurer read his report, which showed a balance in hand in the society's favour. Mr. H. Macdonnell was unanimously elected President for the ensuing year; Mr. J. H. Jackson and Mr. E. Downs Vice-Presidents, with Messrs. Bradley, Byers, Moulton, Fothergill, Hodgson, and Dr. Stainthorpe as Council. Mr. J. H. Rhodes was re-elected Treasurer, and Mr. J. E. Ellam unanimously re-elected Hon. Secretary. A general desire was expressed to have more practical demonstrations during the year. The Secretary promised to lead the way at next meeting with "Film Enlarging." Samples of bromide paper, kindly sent by the Eastman Co., were distributed to members.

**The Louth Photographic Exhibition.**—A most interesting and instructive entertainment was given in the Town Hall on the 8th inst. to a large and sympathetic audience. General regret was felt for the reason which prevented the President of the Society, Colonel Ranshaw, taking the chair, when the Honorary Secretary, Mr. S. Francis Clarke, announced that he was forbidden by his medical adviser to undertake the journey from Bournemouth. The attractive programme for the evening was divided into three parts, the first being limelight exhibition of the prize slides, some illustrations of hand or detective camera work by Mr. Welford. The limelight and the slides were in the hands of Mr. Clarke, assisted by Mr. Herbert C. Bentley, his co-honorary secretary; nothing was left in this department to be desired unless it was that the slides should have preserved a more even position when at rest. Portraits were then shown, for which Mrs. S. F. Clarke won the first prize, viz., silver medal for Home Portraiture, the one entitled "Laughing Eyes" being the favourite, but there is an indescribable tone about all her pictures which gives a most happy effect. In the landscape class Mr. Austin took the silver medal for a fine set of pictures, including "Winter" and "Listening to the Bells." In the same class Mr. S. Francis Clarke was awarded the certificate for his picturesque "Savoy Views." Mrs. Clarke won the bronze medal for her set of six pictures in Class 3 for figure study, the one entitled "Curiosity" being the most popular. The seascapes which followed were very interesting, but the fine wave studies by Messrs. Dresser, Lea, and Dor were deservedly applauded. The instantaneous class showed attitudes that no artist, formerly, dare have represented, and gives the human being the unpleasant feeling that his physical actions may not, after all, be so graceful as fondly imagined. "Where ignorance is bliss 'tis folly to be wise;" but it is hard lines to have folly thrust upon one. The three dog pictures, entitled "High Play," "Low Play," and "Foul Play," were laughable, and the steepchase pictures very good. The "Quiet Corner" in the animal studies we liked; also the zoological garden studies. In the scientific department the "Study in Flowers," by Mr. Tavinere, of London, was the gem set shown during the evening, and, we are told, considered one of the best sets in the exhibition. As a moral a gruesome set of human skeletons came on view. The illustration of hand or detective camera work, by Mr. Welford, comprised a variety of subjects, such as in every-day street scenes, the water-cart, the omnibus, public-house, rag fair, one or two ice pictures, cricket and football matches, tennis and athletic sports, several excellent wave effects and good seascapes, four capital cloud studies; but we like the best the "Snow Storms," representing falling snow flakes; the scene being taken in a town; no pictures shown during the evening seemed truer to nature. The sheep on the Devonshire Tors fill a prominent position in our memory. Vocal and instrumental music was given at intervals in the evening.

**Tunbridge Wells.**—The ordinary meeting was held on the 11th inst., Mr. F. G. Smart in the chair. The Hon. Secretary read a paper on "Lenses," illustrated by a very complete and valuable selection of lenses lent by Mr. W. Wray. Samples of Eastman's new bromide paper were distributed to the members. Mr. Morgan showed another hand-camera he had invented, the chief feature of which is the novel focussing arrangement.

**Ulster.**—Ordinary meeting at Belfast on 11th inst., Mr. J. H. Greenhill in the chair. Mr. Wm. Swanston, F.G.S., read notes on "Ilford Printing-out Paper," and showed sample prints. Chicago slides shown in lantern and lecture read by the Hon. Secretary.

**Wakefield.**—A good attendance of members mustered at the practical meeting held on the 5th inst. The President, Mr. A. W. Stanfield, J.P., occupied the chair. A letter from Mr. Godfrey Bingley, the President of the Leeds Photographic Society, who had kindly undertaken to judge the first annual prize competition, was read, and his awards were announced as follows:—For Out-door Portraiture, 1st, Mr. G. F. Firth. Landscape, 1st, Mr. William Wrigley; 2nd, Mr. A. W. Stanfield. Architecture and Street Views (honorary), Mr. C. W. Richardson. Lantern Slides (any subject), 1st, Mr. C. W. Richardson; 2nd, Mr. G. F. Firth. The awards gave

great satisfaction. Upon the recommendation of the committee it was decided to hold the first social evening in the Music Saloon on March 11th, the proceedings to take the form of a photographic exhibition and concert. Mr. Firth produced for inspection a double syphon print washer which he had recently patented, and Mr. Richardson passed round a combination Caldwell shutter and Wray's lens. A communication from the members of the Paxton Society asking the Society to give them a lantern night early in April was considered and agreed to. Mr. Stanfield suggested that during the ensuing summer session members should select some place of historical interest in the neighbourhood, and write a short descriptive account, illustrating the same by means of photographic views. As an example he had prepared an interesting paper, taking for his subject Sandal Castle Hill, which was listened to with much pleasure, the idea being greatly appreciated. Three new members were elected, viz., Mr. Robert Sheard, Mr. Percy Craddock, and Mr. Robert Robson.

**West London.**—The ordinary meeting was held on the 12th inst., Mr. Bilton in the chair. Mr. L. C. Bennett was appointed Secretary and Mr. W. S. Rogers Assistant Secretary, in place of Mr. Harry Selby and Mr. Leslie Selby, resigned. After the formal business Mr. J. A. Hodges read a paper on "The Plate, the Negative, and some Remarks on Dodging." He mentioned the different characteristics of commercial plates, and described the process of emulsion-making, dwelling on the advantage of adding iodide. Although he did not wish to minimise the importance of what was called a good technical negative, it was still more important to photograph with a motive, and develop according to the particular effect desired, which would give a more artistic result, as a rule, than merely aiming at technical excellence. In his hands pyro, as an all-round developer, worked best, although he should not wish those who succeeded with any other developer to discontinue the use of that by which they got good results. His impression was that plain pyro was best for negatives, giving, upon the whole, the best prints, and showing truer gradation than when a preservative was used. He touched upon the various "dodges" that could be resorted to to improve the negative, mentioning, amongst other things, tissue paper, which was pasted on to the back, and then worked on with pencils of varying hardness, which could be easily done without injuring the negative in any way. Mr. Whiting spoke of the advisability of sticking to one kind of plate for all-round work, as it was easier to master the development and get the effect desired than by constantly changing. He rather disagreed with Mr. Hodges as to the advisability of using dry pyro. He thought the yellow colour of a negative so developed was rather misleading in printing; he could not see that the gradations obtained were any truer than when a preservative was used, in which case the density could be judged of better. One way of working on a negative which he thought good was to varnish the negative with white hard varnish, thinned down considerably. When dry rub the surface rather hard with the finger, and it would presently rub up white and rough, and then would be produced one of the best surfaces to work on that could be obtained. Afterwards dab the finger, covered with chamois leather, into a little powdered plumbago, and rub lightly on any parts of the negative that required intensification, or the surface could be worked on with a pencil. Mr. Colls said he sometimes rolled up a little yellow ochre in some putty and dabbed it on the back of the negative. It gave a good opaque matt surface, and could be strengthened easily by a little harder dabbing on the required parts. Mr. Miller objected to such extensive dodging as was often resorted to. He thought it was much better, instead of using pencil, brush, crayon, and so on, so extensively on a negative, to use them on drawing paper, and he referred to the practice of working on prints, which he had seen at exhibitions, in very uncomplimentary terms. Messrs. H. Selby, Winter, Stein, and others also took part in the discussion. The chairman announced that the future meetings of the society would be held at the Chiswick School of Arts, Bedford Park, Chiswick.

**Wolverhampton.**—A special meeting was held on the 9th inst., when the AMATEUR PHOTOGRAPHER 1891 Prize Lantern Slides were exhibited. Mr. T. Ironmonger, Vice-President, occupied the chair. This being the last invitation evening of the season, a good number of members and their lady friends were present, and, by frequent applause, testified their appreciation of one of the finest sets of slides exhibited before the society. Mr. Ironmonger explained the views as they appeared on the screen. At the close a number of slides were exhibited by the Secretary, Mr. J. W. Evans, and a few hand-painted ones were shown by Mr. H. Holcroft, some of which caused a good deal of amusement.

The latest date for receiving subscriptions to the Maddox Testimonial Fund is March 31st. We shall publish the full text of the final appeal in our next.



## SOCIETIES' FIXTURES.

- Feb. 18.—Brixton and Clapham.—"Lenses," by H. Crouch.  
 „ 18.—London and Provincial.—Lantern and Musical Evening.  
 „ 18.—Cleveland.—"Yosemite Valley" slides.  
 „ 18.—Camera Club.—"Orthochromatic Photography," by S. B. Webber.  
 „ 19.—Lewisham.—"Light Measurement," by Prof. Lambert.  
 „ 19.—Richmond.—"Makeshifts," by Mr. Faulkner.  
 „ 19.—Bristol.—"In and About Columbus."  
 „ 19.—Bristol and West England.—"Photo Prints," by the Secretary.  
 „ 22.—Middlesex.—"The Use and Design of Lenses," by T. S. Taylor.  
 „ 22.—Hastings.—"Flash Light," by A. Brooker.  
 „ 22.—Camera Club.—Demonstration of Printing.  
 „ 23.—P. S. G. B.—"Lantern-Slide Making," discussion.  
 „ 23.—Aberdeenshire.  
 „ 23.—Cornish.—"Photographic Hints and Dodges."  
 „ 23.—Cleveland.—"Lantern-Slide Making."  
 „ 23.—Louth.—Annual Meeting.  
 „ 23.—East London.—Ordinary.  
 „ 24.—Blackheath.  
 „ 25.—Dewsbury.—"Ilford P.O.P. and Alpha," by J. Howson.  
 „ 25.—Hackney.—Lantern Evening.  
 „ 25.—London and Provincial.—Members' Open Night.  
 „ 25.—Camera Club.—Lantern slides.  
 „ 26.—Richmond.—"Finishing in Monochrome," by H. Durham.  
 „ 26.—West London.—Lantern.  
 „ 26.—Croydon.—Lantern night.  
 „ 27.—Putney.—"Exposure," by F. Farrars.  
 „ 27.—Brixton and Clapham.—Smoking Concert.

**Presentation at the Liverpool Institute, Mount Street.**—On Monday afternoon the boys were called together in the Lecture Hall for the purpose of presenting the honorary testimonial on parchment, of the Royal Humane Society, to James H. G. Wood, aged 14 years, son of Mr. James Wood, the inventor of the well-known "Washer," "for having on the 1st September, 1891, gone to the rescue of Thomas Shields, who was in imminent danger of drowning at Milford Haven, and whose life he gallantly saved." The head master, Mr. Alfred Hughes, M.A., in a few well-chosen words, gave particulars of the rescue, and having praised the boy for his pluck, the proceedings terminated.

**Leeds.**—Dr. Jacob lectured before the members on the 4th inst. on "Practical Photomicrography." This was the first lecture of the session, and was well attended. The lecturer showed the apparatus used by himself for the production of photographs of microscopic subjects enlarged up to 1,500 diameters, as also photographs of some of the most elaborate microscopic cameras, pointing out the advantages and defects in each. He dwelt at some length on the advantage to students of being able to see in microphotographs the form and structure which absolutely exist. This is of far greater service than the best drawing could be. The artist unconsciously represents not only what he sees but what he thinks he sees, and so inaccuracy creeps in; a microphotograph, however, has no imagination to draw upon and must confine itself to the truth. The most recent advance in the production of this class of photographs was the use of orthochromatic or colour-corrected plates, which enabled the subject to be photographed, no matter what dye had been used in preparing the specimen.

**The Automatic Photograph Company.**—On Saturday Mr Registrar Brougham resumed the inquiry into the promotion of the Automatic Photograph (Foreign and Colonial) Company, Limited. The company was formed in May, 1890, with a capital of £251,000, to acquire the foreign and colonial patents of the Automatic Photograph Company for the sum of £201,000, and went into liquidation in July, 1891, with a deficiency to the contributions of £206,123. Mr. Stewart, Official Receiver, appeared in person; Mr. Upjohn, Mr. Emden, and Mr. Oswald for various interests. On the previous occasion Lord St. John and other directors were examined, and were practically at one.

## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

## RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the **number and full title of the query** referred to.

## QUERIES.

5441. **Carriers.**—Can any reader tell me where can I get a carrier for a half-plate slide to take plates lantern size, 3½ by 3½, and also the price?—S. L. W.
5442. **Hand-camera.**—Can any reader recommend me a good hand-camera and lens, complete, about 30s. or so?—S. L. W.
5443. **Copying.**—I want to copy some engravings to make lantern slides from, and, of course, I cannot mount them on card, so I should be much obliged if anyone will tell me how I can best fix them without any wrinkles showing in the photograph. I tried pinning them on a drawing board, but could not do so without wrinkles showing.—L. WILTSHIRE.
5444. **Reducer.**—Can any reader give me a good formula for reducing? Please state what proportions for use.—P. D. BARNETT.

5445. **Hand-camera.**—I have an old 5 by 4 box camera. Will some one kindly say the best way to make this into a hand-camera?—C. H. W.

5446. **Halation.**—Would any reader kindly tell me what is halation, as I see so much about it in these columns?—BROMIDE.

5447. **Sensitising Opals.**—Will some reader kindly inform me how to sensitise opals, so that you can print and tone them the same as you would the ordinary sensitised paper?—SILVER KITTY.

5448. **Cycling.**—Can any fellow reader inform me if it is practicable to carry on the two pastimes, namely, photography and cycling, together, as I am going in for the latter this season, and do not wish to throw up my old hobby? I have a Lancaster's quarter-plate Instanto outfit. For information regarding the most convenient method of carrying on my Safety I should be much obliged. Does any one know of a special non-vibrating luggage carrier, and arrangements to put in dark slides to prevent the shaking up so injurious to dry plates?—TOM LARROW.

5449. **Enlarging.**—Using a lens of 5 in. focus to enlarge from quarter-plate to half-plate, whole-plate, 10 by 8, and 12 by 10 on bromide paper, will any reader kindly give me the distances from negative to lens, and from lens to bromide paper, and will the using of stops materially affect the distances?—RUTAMA.

5450. **Opalines.**—Can any reader tell me how opalines are made, or where to get the best information regarding same?—ORYT.

5451. **Lens.**—Can any reader give me the advantages and disadvantages of using a half-plate lens in a quarter-plate camera?—ORYT.

5452. **Enlarging.**—If instead of using frosted or ground-glass between lamp and negative of enlarging camera to diffuse the light, we pasted white tissue paper on both sides of a piece of plain glass, would it have the same effect?—RUTAMA.

5453. **Dark-room Light.**—What effect would it have on a ruby or orange light to insert a piece of ground or frosted glass between the light of lamp and the ruby glass?—RUTAMA.

5454. **Cabinet Work.**—Could anyone tell me the best place to get a quarter-plate Lancaster's Instantograph, 1887 pattern, altered? I want it arranged so as to be able to slide the double backs in, instead of fastening by buttons as they do now.—BARBER.

5455. **Shew's Adapter.**—Can anyone recommend Shew's Camera Adapter? I am thinking of having my quarter-plate adapted to half. Is the adapter removable?—QUARTER-PLATE.

5456. **Copying Book Engravings.**—I am desirous of making a number of lantern slides for lecture purposes from book engravings, and for this end have

been trying to photograph the engravings on quarter plates (Mawson and Swan's Castle), to be afterwards transferred on to lantern plates by contact. The negatives develop well, but after fixing they are found to be lacking in contrast, the lines weak, and will only give very inferior lantern slides. I give 30 sec. exposure in a room with good light from window. Any hint from fellow workers would be of great use.—MUSTAPHA.

5457. **Enlarging.**—I find a difficulty in focussing for enlargement from quarter to half-plate with camera similar to "Multum in Parvo," and with the aid of focussing lens. The lens I use is same as negatives were taken with. The negatives are sharp, but it seems to be only by chance that I can get a sharp enlargement. Any hints from one who has met with a similar difficulty will oblige.—SIRRAH.

5458. **Correct Exposure.**—What are the best exposure tables to work by for landscape and out-of-door use? Using half-plate camera, Ross' Rap. Sym. lens (equivalent focus 7½), on bright, sunny day in middle of June, at noon, with Ilford ordinary plates, would the following exposures be approximately correct? Open landscape, with a figure of a man at about twelve paces (to give a figure in foreground), but with no object near camera, using f/22 stop, and an exposure of ⅓ sec.? Or again, with foliage of tree in foreground, same landscape and conditions, would it be better to employ a smaller stop, say f/45, and a proportionately increased exposure of 2 sec.?—PALLAS.

5459. **Glass Positive.**—Could any reader tell me how to produce a glass positive from a negative. (1) Could I expose a plate in contact with the negative in a printing frame? (2) If so, ought I to expose it in daylight or artificial light? (3) Should I use a slow or rapid plate? (4) Will it require an ordinary development? If any will help me I shall be very much obliged.—P. D. BARNETT.

5460. **Windsor Burnisher.**—Can anyone tell me where I can obtain the Windsor burnisher, and price of same?—BEGINNER.

5461. **Enlarging.**—Can I enlarge to 8½ by 6½ with a quarter-plate rapid rectilinear in an apparatus like Lancaster's "Multum in Parvo," or made like the design given in the *AMATEUR PHOTOGRAPHER* a few weeks ago, in "Enlarging," by "Ammer Tugher," and what is the largest size that I can enlarge to with above lens, which is 5½ in. focus? (2) What distance should I want when enlarging with above lens between negative and lens, and lens and plate, from quarter-plate to whole-plate?—ENLARGING.

5462. **Developing.**—Could anyone give me a formula for developing instantaneous pictures on Ilford extra rapid plates taken by Lancaster's half-plate Instantograph?—BEGINNER.



5463. **Films.**—Can anyone who has had experience in working the ordinary flat films tell me whether they are perfectly satisfactory for taking abroad instead of glass plates? Also whose films are the most reliable, what degree of rapidity they bear compared to Edwards' special instantaneous plates (Red Label), and whether there is any difficulty or trouble in developing them? Are the results obtained on films as satisfactory as if taken on glass plates?—W. INGLIS-JONES.

5464. **Ilford Printing-out Paper.**—Will any kind reader inform me if the combined toning and fixing solution will do for this paper, or not?—SER.

5465. **Naming Dishes.**—I want to name my white porcelain dishes, but do not know how to proceed with same.—BEOINER.

5466. **Opaline Glasses.**—Where can I buy the bevelled glass plates for opalines?—ENLARGING.

5467. **Enlarging.**—Is it possible to enlarge with ordinary half-plate camera and R. R. lens without any other enlarging apparatus? If so, how?—DAYLIGHT.

5468. **Rectigraph Lens.**—Is Lancaster's Silver-ring rectigraph quicker than the single instantaneous lens issued by the same maker?—W. A. R.

5469. **R. R. Lens.**—Can any brother amateur tell me the best R. R. lens (quarter-plate size) to be obtained for between 30s. and 40s.?—R. A. W.

## QUERIES UNANSWERED.

Jan. 8.—Nos. 5348, 5364,  
 „ 22.—Nos. 5370, 5380, 5382, 5383, 5392, 5395, 5396.  
 „ 29.—Nos. 5399, 5400, 5409, 5413.  
 Feb. 5.—Nos. 5419, 5420, 5422, 5423, 5429.  
 „ 12.—Nos. 5430, 5433, 5436, 5440.

## ANSWERS.

5387. **Instantaneous Shutter.**—Lancaster's Chronolux Shutter is a very good one and suitable for most work, but I think personally I should prefer a Thornton-Pickard, but it depends a great deal on the work and speed you require.—IVAN.

5391. **Lantern Slide.**—If you are capable of making a lantern slide from a negative, you can equally make a negative from a lantern slide by contact or by enlarging.—IVAN.

5397. **Hydroquinone Formula.**—You had better get packets of the Alpha and the rapid bromide papers from the Ilford Company, and use their Universal developer, following the instructions for exposure, etc. No, you cannot develop more than one print at a time, if you wish for good results; and the prints should look the colour you require them before removing from the hydroquinone developer. The rapid bromide paper gives with full exposure nice grey prints, and I cannot see why you require the Alpha paper.—IVAN.

5397. **Hydroquinone Formula.**—This is what you want:—

|                           |         |
|---------------------------|---------|
| (A) Hydroquinone .. .. .  | 160 gr. |
| Soda sulphite .. .. .     | 2 oz.   |
| Soda bisulphite .. .. .   | 2 dr.   |
| Potassium bromide .. .. . | 80 gr.  |
| Water (distilled) .. .. . | 20 oz.  |
| (B) Soda hydrate .. .. .  | 160 gr. |
| Water .. .. .             | 20 oz.  |

Use 2 dr. of solution A, 3 or 4 dr. of solution B, and 2 oz. water. Grey tints are obtained by over-exposure. Use fresh developer each time. The same developer may be used if you have a greater quantity of developer, say three or four times the bath, for each batch.—CYANIN.

5411. **Printing-in Clouds.**—I am afraid there is no other method than the one described in the same number of the AMATEUR PHOTOGRAPHER as your query appeared. No great accuracy is required in the cutting of the mask, especially when there is foliage. The exposure need be by no means short, for when clouds are being printed, the exposure should be made at a good distance from the source of light; but remember the rule: *The intensity of the light varies in inverse proportion to the square of the distance from the source of light*; in other words, when you doubt the distance between the source of light and the printing frame, you must quadruple the exposure, and so on.—G. P.

5415. **Gelatino-Chloride Paper.**—You must be more careful in squeezing the print, and get out all air bubbles. These cause the bright spots.—IVAN.

5415. **Gelatino-Chloride Paper.**—Bright spots on matt-surface prints peeled from ground-glass are far from rare, being caused by air bubbles, and may be removed by carefully rubbing print with a flannel pad and powdered pumice stone.—E. DALTON.

5418. **Help Wanted.**—If "Watlass" will communicate with me (address with Editor), I shall be pleased to help him.—IVAN.

5418. **Help Wanted.**—(1) By weighing in a pair of scales. If you have no grain weights, you can purchase a set for a shilling, or get a druggist to weigh out for you. (2) Rapid rectilinear doublet. (3) If you do not know the focal value of your lens, you cannot calculate or compare the exposure of plates. (4) A borax toning bath will not keep more than a day or two; possibly your bath had been some time. Try:

|                          |        |
|--------------------------|--------|
| Chloride of gold .. .. . | 2 gr.  |
| Acetate of soda .. .. .  | 60 „   |
| Distilled water .. .. .  | 20 oz. |

Make a day or two previous to use. This will keep a very long time. Be very careful not to get any hypo into your toning bath.—SACITARIUS.

5421. **Ilford Printing-out Paper.**—(1) If the toning bath be not so strong in gold as to give black tones and discoloured whites, it may be used till exhausted; if otherwise, the remedy is obvious. (2) If not enamelled, the prints may be mounted in the usual way with starch paste. If enamelled, however, they will require backing.—E. DALTON.

5421. **Ilford Printing-out Paper.**—I have used their own bath, which can be used over and over again till exhausted. I prefer the mixed toning and fixing bath, which works splendidly. I have mounted heaps of prints, and never backed one as yet—can't see the object of it, unless you require to keep the highest gloss of which the paper is capable, in which case it is better to damp it as little as you can. But the highest gloss obtained even when the prints are mounted direct is quite enough for my taste. I will send you a print if you like to write to me.—R. A. R. BENNETT (Oxford).

5424. **Toning Prints.**—Hypo-sulphite of soda has done the mischief. Use clean dishes, one for each process, is the way to avoid it.—CYANIN.

5424. **Toning Prints.**—The faulty colour is probably caused by insufficient washing in the first instance.—E. DALTON.

5424. **Toning Prints.**—These are due to impure fingers, or to the prints overlapping in the toning bath. The remedies are obvious.—G. P.

5424. **Toning Prints.**—Merely uneven toning. Keep them moving all the time. They ought to be red all over before toning; if they are not, put a handful of salt in the washing water before toning, and then rinse them in pure water.—R. A. R. BENNETT.

5425. **Tripod.**—Messrs. Watkinson and Co., Harrison Street, New Briggate, Leeds, supply parts of very light and firm tripods at a cheap rate.—G. P.

5426. **Refining Gold.**—You had better first file the article, and then boil the powder for some time with strong nitric acid before attempting to dissolve the gold in aqua-regia; this will dissolve out any silver present, and allow the combined acids to act more readily on the gold.—IVAN.

5426. **Refining Gold.**—Put a small quantity of common gold in a crucible, and place in a furnace; when about to melt add equal proportions of pearlash and saltpetre, about a tablespoonful together, also a piece of borax, the size of a Spanish nut. Subject it to almost a white heat, then take the melting pot from the fire, and when cool break the crucible with a hammer, and the piece of pure gold will be found at the bottom.—TOM LLARROW.

5426. **Refining Gold.**—Dissolve the trinkets in aqua regia (a mixture of three parts of nitric and four or five parts of hydrochloric acid), add solution of ferrous sulphate, and set aside; metallic gold is precipitated. The precipitate may then be dissolved in aqua regia (10 dr. aqua regia to every 123 gr. precipitate), and set aside in a warm place; solution of perchloride of gold (AuCl<sub>3</sub>) results. Add 5 oz. of distilled water to the above-mentioned quantities, then neutralise almost all the acid with chalk or carbonate of sodium. Filter and add water until the solution measures 22 oz., always passing the water through the filter. You will then have a solution containing 1 gr. of perchloride of gold (usually called chloride of gold) in every drachm.—G. P.

5427. **Stripping Films.**—There is no means of removing the film from an unexposed plate without injuring it.—E. DALTON.

5428. **Bromide Paper.**—Lay the paper on the hand; the sensitized side will curl inwards.—CYANIN.

5428. **Bromide Paper.**—The film side is smooth, whilst the other is comparatively rough; the edges, too, have a tendency to curl in on the film side.—T. DOWLING.

5428. **Bromide Paper.**—Hold the paper up by one corner, and it will curl towards the film side; or moisten the tip of your finger, and rub very gently a corner of the paper, and the side which feels most slippery is the film side. It may be useful to know that Eastman's bromide paper is packed with the film side all one way, while Ilford bromide paper is packed half and half, so that the films face the centre.—TASMA.

5431. **Platinotype Prints.**—I should advise you to immerse the prints, as it makes not the slightest difference to the result, and entirely prevents air bubbles. Many of our best workers do so. Keep them face downwards.—R. A. R. BENNETT.

5431. **Platinotype Prints.**—Take print by each end, preferably in vulcanite forceps, face downwards and let it bulge down in the centre like a bow. Have your bath heated to 170 to 180 deg., and pass the print through it backwards and forwards two or three times, not letting go of it at all. If you soak it for ten minutes you will not develop any more out of it.—SACITARIUS.

5431. **Platinotype Prints.**—The tendency to curl on the developing solution must be overcome by manipulation. I manage this by using the fingers of one hand and a horn pin in the other to extend the paper wherever it curls up. If some of the solution gets on the back of the print it does not matter. The prints cannot be developed face upwards, except by immersion, and without a large quantity of solution to immerse the print in at once it would probably be spoiled by unequal development.—C. E. F.

5432. **Hymns for Slides.**—It is very possible that slide makers, such as York, who supply the greater

number of commercial hymn slides, have the type set expressly for them. The hymn when printed would be pasted inside a stock border, and the whole photographed together, the joint being concealed by blacking the negative. But for general purposes an ordinary hymn-book without music will do. The leaves should be cut out and pasted on card-board to keep them flat, and to get one verse under the other. In photographing matter not especially printed for the purpose, the difficulties met with are, the print on the reverse side often shows through the paper—this can be remedied to a great extent by blacking it out on the negative; the paper may have a slight tint of colour, which fogs the parts that should come out clear glass. Some kinds of type are less suitable than others for photographing. What is known as old style, such as "The Principles, etc.," page iii., but smaller size, in AMATEUR PHOTOGRAPHER of February 12th, is perhaps the best, the up and down strokes being nearly alike in point of thickness.—EXPERT.

5432. **Hymns for Slides.**—You will get very few ready printed suitable for making slides from. The best way is to have them printed in large type, specially to order, and copy down.—ALLISON.

5434. **Formula.**—Marion's Eikonogen Developer:—

|                                    |           |
|------------------------------------|-----------|
| (A) Sodium sulphite (pure) .. .. . | 440 gr.   |
| Eikonogen crystal .. .. .          | 110 „     |
| Water .. .. .                      | to 10 oz. |
| (B) Washing soda .. .. .           | 320 gr.   |
| Water .. .. .                      | to 10 oz. |

Mix equal parts for use. If very clear shadows are required, use bromide of potassium in the proportion of one-tenth of a grain to the ounce upwards.

Thomas' Hydroquinone Developer:—

|                          |           |
|--------------------------|-----------|
| (1) Hydroquinone .. .. . | 160 gr.   |
| Soda sulphite .. .. .    | 2 oz.     |
| Acid citric .. .. .      | 60 gr.    |
| Potash bromide .. .. .   | 30 „      |
| Water .. .. .            | to 20 oz. |
| (2) Soda hydrate .. .. . | 160 gr.   |
| Water .. .. .            | to 20 oz. |

Use equal parts of Nos. 1 and 2. In hot weather 3 or 4 gr. bromide of potassium extra per ounce may be added to the developer. For over-exposure use a diluted developer to which the extra bromide and 1½ gr. ammonia carbonate per ounce has been added. When the desired density has been obtained, develop out with the normal developer. Don't use the alum bath till after fixing. Make a 10 per cent. solution of bromide of potassium for adding to the developer as required.—T. DOWLING.

5434. **Formula.**—Marion's formula for eikonogen is:—

|                                              |       |
|----------------------------------------------|-------|
| I.—For Portraits and Landscapes.             |       |
| (A) Sulphite of sodium .. .. .               | 4 oz. |
| Water (distilled) .. .. .                    | 60 „  |
| Eikonogen .. .. .                            | 1 „   |
| (B) Carbonate of soda (crystallized) .. .. . | 3 „   |
| Water (distilled) .. .. .                    | 20 „  |

Immediately before developing mix three parts of solution A with one part of solution B.

II.—Instantaneous and Under-exposed.

|                                   |       |
|-----------------------------------|-------|
| Sulphite of sodium .. .. .        | 4 oz. |
| Carbonate of potassium .. .. .    | 2 „   |
| Eikonogen .. .. .                 | 1 „   |
| Boiling water (distilled) .. .. . | 40 „  |

Dissolve by shaking well. Nothing gained by having bromide separate. For over-exposure the high lights and sky should be brought out with diluted developer and 2 gr. of carbonate of ammonia per ounce of developer. Do not use the alum bath until after fixing, or stains are liable to ensue. When cool it is ready for use. Place in stoppered bottle when not in use. Of course, you can reduce the above quantities, so long as they are in the same proportion one to the other. Thomas' formula for hydroquinone is:—

|                                           |         |
|-------------------------------------------|---------|
| (A) Hydroquinone .. .. .                  | 160 gr. |
| Soda sulphite .. .. .                     | 2 oz.   |
| Acid citric .. .. .                       | 60 gr.  |
| Potash bromide .. .. .                    | 30 „    |
| Water (distilled) .. .. .                 | 20 oz.  |
| (B) Sodium hydrate (caustic soda) .. .. . | 160 gr. |
| Water .. .. .                             | 20 oz.  |

For use, equal parts of A and B.—CYANIN.

5435. **Copying.**—I can give approximate exposures as the information given is more specific than usual; but the value of the light (independently of atmospheric conditions) will vary according to the amount of sky light shut out by adjacent buildings or trees. For instance, the light falling upon a doorway in a narrow street would probably be less than a quarter that falling upon the ground in an open meadow at the same time. I consider  $f/64$  a needlessly small stop to use,  $f/32$  is quite small enough; but I answer the questions as given:—(1) 4 min.; (2) 1½ min.; (3) 3 min.; (4) 1½ min. (6) taking the normal focus of the lens (say,  $\frac{1}{4}$  in.) as 1, the increased focus of the lens necessitated for copying or enlarging must be measured by that standard, and the square of this gives the increase of exposure over the normal one. Thus the increased focus of 15 in. is twice the natural focus, and as the square of 2 is 4, the exposure must be four times that needed for the same object at a considerable distance. With thin plates, such as those of the sensitiveness named too often are, intensification is often needed; but with richly-coated slow plates (sold by most makers) it will be quite unnecessary.—ALFRED WATKINS.

5437. **Bromide Paper.**—You could take a view in the manner you mention by using the camera and



excluding the light from a room, the same way as in a camera obscura but your print would be a negative.—**SAOTTARIUS.**

5437. **Bromide Paper.**—Yes, certainly, but the image will be a negative one.—**G. P.**

5437. **Bromide Paper.**—It would be a negative, of course.—**R. A. R. BENNETT.**

5437. **Bromide Papers.**—Yes; fix the bromide paper on an old negative glass by means of glycerine or paste, and place in dark slide. I use Ilford slow paper, and find the rapidity about equal to Ilford ordinary plates. Before developing soak in water to free the paper from the glass. To print, place a cleaned negative glass in the frame, on it lay the bromide negative, face upwards, and upon that place the sensitized paper. Printing is best performed in the sun at this time of the year.—**GRIMSTON.**

5438. **Shutter.**—This depends altogether on working aperture of the lens, the rapidity of your plate, the light, etc. You can always reduce the rapidity of exposure by using a smaller stop in your lens. There is no other reliable way for giving shorter exposure with the shutter you mention. But really you ought not to attempt instantaneous work until you are well experienced in giving time exposures.—**G. P.**

5439. **Copying.**—A short exposure, because you want to intensify the contrasts. But, of course, it must be enough to give all details. Use some developer, such as a pyro developer, containing sulphite, or hydroquinone, or ferrous oxalate, which gives strong contrasts, and develop slowly and rather deep.—**R. A. R. BENNETT.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED. AM: PHOT.**

H. S. W.—There is still a very slight trace of hypo to be detected. You are undoubtedly over-exposing your prints most fearfully. Place the frame two feet from the candle, and cover the print up for about three parts of its length with black cardboard, expose for 15 sec., then draw the card further down and expose for 15 sec., and repeat operation; you will thus have on development four strips of the print which will have received 15, 30, 45, and 60 sec. exposure exactly, and if you send us the print up we will tell you the best exposure. This is the only way to learn it. A lamp will of course shorten the exposure—for flat negatives use a slow bromide paper, and rather under-expose to increase contrast.

G. BANCROFT.—Your calculations are quite right, but have you allowed for the condensation of light by the front lens? See "Photographic Procedure," in our issues of Nov. 6 and 13th, 1891.

J. GALE.—We are sorry your entry form got mislaid in the post. The question was raised by the judges as to whether the light behind the mill-top was not false, considering how low the sun was.

F. BETLEY.—Francis, 2, Creed Lane, E.C.

CRISCO.—Yes, certainly.

J. W.—We believe the two lenses are made by the same maker.

KI-NON.—Please send address.

C.—Yes, the portrait lens is the most suitable lens you can have.

**BOTANY BAY.**—(1) If you do not immerse your prints bodily and at once, stains may ensue from the solution reaching the back in patches. Provided extra care is taken in washing the prints afterwards, there is no harm in immersing. (2) They may be kept at least a fortnight or three weeks, but it is questionable how long they may actually be kept without degradation of the high lights. The prints do not need rolling, but they may be so treated if you like. (3) Maricon and Co., 23, Soho Square, London, W., supply the Actinograph, price 10s. 6d. (4) No, certainly not, if you want to get good results. Lengthy exposures by gaslight are far preferable to short ones by magnesium flash. We hope to have some articles on this subject shortly.

C. LYON (Ma'ta).—Many thanks for note, which we use.

S. POLLARD.—The Beach developer is a very old favourite, and has turned out good work. Replace the sulphite and sulphurous acid by half ounce of metabisulphite of potash, and you will have a better formula and easily made.

J. THOMAS.—(1) We should choose No. 1 or No. 5. (2) The brass works a little easier. (3) Yes, you can enlarge with them. (4) The lens is not very satisfactory for portrait work. (5) Nos. 1, 2, 4, and 5 are actual makers, but 3 we do not know. (6) Your picture was received very late, after the judging, etc.

FALK.—Many thanks for chatty letter, part of which we shall use. We dare not close down the queries, though we sometimes wonder why the askers do not try things for themselves. We have a fearful pressure of work on, but we will really try and let you have syllabus this week.

P. D. BARNETT.—(1) Several queries and answer were held over last week for want of space. (2) We had so many answers to 5428 that we were obliged to cut some out. (3) We publish the queries and answers some week as received when possible. (4) Our new volume commenced on January 1st.

BERRIE.—We published an 1891 Annual, price 1s. post free in paper, and 1s. 6d. post free in cloth. Thanks for good wishes. Entry form sent on.

S. OGDEN.—Yes, up to standard of competition.

G. E. T.—The backing papers will certainly help to prevent halation. Do not polish your prints, leave them with natural gloss, and then sift the pumice powder over, and then rub gently with the ball of the thumb.

E. W. MALE.—Have you allowed for the condensation of light by front lens, and is the equivalent focus exactly  $\frac{1}{2}$  in. ? If so, stick to your own figures.

F. PARTRIDGE.—Overtoneing is the cause of all your trouble, but if you will send us up some of the sulpho salt we will try it for you. Are you using your bath too strong?

J. D. S.—We shall hope to have a Stereo Competition this year.

A. T. HARDWICK.—Both prints good—entry, form sent on.

J. L. PORTER.—Sorry to hear of the decease of the society. Our columns are open to you if you like to try and galvanize it into life.

F. W. CLARK.—Make a short sleeve of black twill to fit on camera by elastics, and nail on the window frame; this will get you out of your difficulty.

GEO. B. BATE.—We can only suggest that you did not carry the operation of toning far enough. Let us see a print if you can. Neither the washer nor I. R. tube would affect the tone.

H. P. G. NEWHAM.—(1) Try the following:—

|                                  |           |
|----------------------------------|-----------|
| (A) Pyro .. .. .                 | 1 oz.     |
| Metabisulphite of potash .. .. . | 1 oz.     |
| Water .. .. .                    | to 10 oz. |
| (B) Washing soda .. .. .         | 2 oz.     |
| Potassium bromide .. .. .        | 20 gr.    |
| Water .. .. .                    | to 20 oz. |

For use, mix 30 minims (A) with 1 oz. of (B), and add 1 oz. of water for half-plate. (2) Rodinal gives softer results than quinol—see advertisement for price, etc.

S. P. J.—Many thanks for your letter; one used this week, and the other next. Shall be pleased to see prints.

J. CHAMBERLAIN.—Many thanks; we shall probably utilise.

ALF. STIEGLITZ.—Prints shall be returned this week.

IGMA.—If you will send us the main points you want, and a numbered list, we will then indicate those we think most likely to meet your requirements.

RODWEL GEORGE.—(1) No sharp focus, over-printed, flat and poor, badly trimmed. (2) Badly trimmed and mounted, and by no means artistic. (3) The horizon cuts the picture in two, and the water is too white. Pay more attention to details, don't try and take so much in, and let us see some more work in a month.

METFOR.—(1) A little too grey, and too much foreground; the fending is offensive too. (2) The snow too white; if you can get out more detail in the snow by shading the other parts of negative, this will be better. (3) The white cascade of water wants more detail in it. (4) Spoilt by the figure and one inch too much foreground. 2, 3, and 4 are up to competition standard.

BENJ.—(1) Right-hand side too black, too much foreground. (2) One inch too much foreground, too dark. (3) Water too white, wants clouds. (4) Too dark. (5) Very fine effect. (6) Wants clouds. (7) Ditto, a little too dark. (8) Good. (9) Excellent. (10) Bad, too black, and utterly without interest. (11) Good. (12) Good. (13) Too much foreground and too dark. (14) Excellent. (15) Good. (16) Good. (17) Water too white, and hardly enough in it. (18) We have not received. Your work is good, but there is a tendency to blackness in the prints. You ought to score, however, in our competitions.

W. T. TUCKER.—Your letter to hand. We do our best, and will try and pick you to bits next time.

IRIX.—(1)  $\frac{1}{2}$  inches too much foreground; as portraits, good. (2) Over-exposed, overtoneing, requires at least 2 inches off foreground, and has no artistic merit at all. (3) Rather a cramped position, but good. (4) Overtoneing. (5) Had you placed your camera upright and removed the desk in front, this would have been a first-rate picture. It is not printed deep enough now—still up to competition standard. (6) Face too hard and white, over-exposed, flat and poor.

R. H. T.—Probably your "white metallic spots" are silver stains, caused by damp when printing. Try a weak bath of iodide of potash, 15 gr., cyanide of potash, 10 gr.; water, 10 oz., and rub gently with cotton wool, then reflux and rewash.

CAMERA. (1) Use the double-jointed hinge No. 2. (2) The bush hole should be exactly on the line with the centre of gravity when lens is on front and loaded dark slide in position, or rather nearer the back. (3) The wood of sliding parts is merely planed absolutely flat and true, and then black-leaded. (4) The lens can be used as it is, or you can make stops if you like.

E. F. DENISON.—We cannot now alter the entry forms, but will make a note of your suggestions. Entry form sent on.

J. E. ELLAM.—Slides received, and matter shall be looked into.

H. E. KINGSFORD.—Thanks for fixtures. Our publishers will write you about missing numbers.

J. R. BIGNEY.—(1) The apparatus named is capable of turning out good work. (2) You would still be an amateur.

O'N. F. KELLY.—(1) We prefer No. 1. (2) The Optimis is quite satisfactory. (3) No. 1 we like best.

W. H. B.—It was quite necessary to lash somebody, and we hope that if it hurt at the moment, the recipient will think it was for his good. (1) Technically good, though artistically, to get a building right square on as you have, is not pleasing. (2) Decidedly pleasing, but what is the smoke, haze, or fog in the distance? Did you sun down or try to? (3) Poor, too much foreground, path too white, and is it water or another path on the left? We send you entry form, and wish you success.

EXPRESS.—(1) The camera would certainly be cheap, but we cannot state whether it would be good, without examining it. (2) The sulpho-cyanide bath is the one to use, but others will give good tones. Prints on any paper are admissible.

H. I. C.—The colour of the background must be chosen to suit the colour of dress, hair, etc.; generally a neutral grey will give the most pleasing results. You would find Dyson, Shambles Lane, Huddersfield, has some very nice and cheap background materials, or you can use the plain coloured material as used for window blinds. There are some very good articles on Home Portraiture in Vol. 13, from April to June 1891.

J. S. R.—(1, 2, 3, 4) All these are under-exposed, fogged in developing, and under-printed. (5) This is an improvement, but not much. (6) Overtoneing and face too white. (7) Street scene, good, but would stand deeper printing.

T. J.—The best lenses are always selected for the best lanterns, and therefore the 82s. instrument will have the advantage over the 30s. one. The equivalent focus of lenses is about 6 in., and all wicks are 2 in. wide. A thoroughly good article is the perforated Russian iron lantern, at 50s.; the 80s. lantern is, of course, a much handsomer and richer-looking instrument.

F. F. BULLEN.—Your prints are fearfully overtoneing, suffer from halation; that is, the creeping action of the bright light on to the dark parts, and from a flare spot caused by reflections from the lens surfaces. A backed plate is one coated on the glass side with some non-actinic paper or paint, which assists in preventing halation, which is frequently caused by the reflection from the back of the plate.

V. T. CREW.—We have carefully examined your print, and the clouds are far too deeply printed, and it certainly does not give the idea of sunshine, although there are shadows. If you can improve nature by printing in clouds, it is not only legitimate but advisable.

RAPID.—We do not think you will get into much trouble if you add your alkali or accelerator by degrees to the developer so as not to fog the plate; rapid plates are more liable to fog than the ordinary ones. Send us up some prints as you go on, and we will advise you.

CARBONATE.—(1) Pressure of work has prevented us from replying to you and from criticising the answers sent in. The questions should have been published, but were crowded out. (2) Your print would be eligible for "Inland Scenery." (3) An enlargement is permissible.

O'N. F. KELLY.—Benham and Froud, Chandos Street, Charing Cross, will supply what you want.

GEO. WATSON.—We prefer dark slides. You must submit a numbered list to us, and we will then indicate those we think likely to suit your requirements.

A. H. MOORE.—Letter by post.

T. F. SANDERSON.—Many thanks for paper, which will, we hope, appear next week.

NOSMO.—The single figure was not sufficiently sharply focussed, and the figures in the group should have been arranged somewhat in a semicircle; then probably you would have got them sharp, which could also have been effected by stopping down. Probably your lens it not meant for a half-plate.

G. H. FLOSS.—We should have thought No. 3 would have given the best lighting, although possibly No. 2 may give more harmonious results. Use the red label plate, the largest aperture of lens, which will give you sufficiently sharp definition.

J. H. BULLOCK.—We cannot recommend the use of the ferrous oxalate developer for negative work. No. 2 is the better formula.

J. BULBECK.—Some of the prints have already started, and the others follow next week, yours amongst them.

H. RIASER.—Many thanks for your letter, the contents of which have been forwarded.

A. BOTHERER.—(1) Your negative is already on the road. (2) Possibly within fourteen days. Yes, we think you are entitled to a progressive. (3) Neep-see. (4) Werge's "Evolution of Photography," 6s., and Jerome Harrison's "History of Photography," 5s. Yes, will try and pick out some slides.



## Sale and Exchange.

### RULES.

**CHARGE.** Twelve words or less for **Fourpence.** Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to **Wednesday morning, 9 a.m.**) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**DEPOSITS.**—The money for goods forwarded on approval must be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to **Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.**

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d. or a commission of 2½ per cent., upon the sale price of the apparatus.

**Backgrounds, etc.**—Handsome exterior background in flatted oils, 8 ft. by 38 in.; foreground to match, 8 by 6, in oils; rustic wall and fence; all perfectly new; price £2; or 15s. 6d., 10s. 6d., and 15s. 6d. each. Handsome interior, flatted oils, same size, price 15s. 6d.; photographs showing all, one stamp.—William Hare, Photographer, Sutton, Surrey.

**Cameras, etc.**—Half-plate camera, four best double slides, and good case lined with baize (Photo Artists Association makers); all in excellent condition; £4 10s.—A. L. Spiller, Hillside, Hampstead Hill Gardens, London.

Lancaster's 1890 half-plate Instantograph, three double slides, tripod, no lens, splendid condition, 65s.—Wood, Wheatthill, Rotherham.

**Cameras, Lenses, etc.**—Quarter-plate splendid box camera, two double slides, and splendid portrait lens, the whole nearly new, 42s.; bargain.—J. Jewlor, care of Mr. Waugh, 10 S. B. Canongate, Edinburgh.

Half-plate camera, double dark slide, good view lens, price 28s.—T. Key, George Street, Grantham.

**Enlarging Apparatus.**—Enlarging lantern, 8½ condenser, nearly new; cost £8 10s.; will take £5.—Berkeley, 4, Gray's Inn Square, London.

**Hand-Cameras, etc.**—Optimus hand-camera, brass-bound, can also be used on stand as ordinary camera; cost £10 10s.; focussing screen, six double backs, fitted with Optimus landscape and Taylor and Hobson's hand-camera lens, Iris diaphragm, new last year; in good condition; price £7 15s.; lens cost £5 2s.—Frederick Holmes, French Embassy, Albert Gate, London.

Adams' 1891 Ideal hand-camera, equal to new, twelve quarter-plates, price £5 10s.—G. A., 13, Thicket Road, Anerley.

Griffith's Guinea hand-camera, with pneumatic shutter for time exposures; cost 26s.; for 17s. 6d.—Midgley, 57, Hartington Street, Newcastle-upon-Tyne.

Pocket camera, lantern size, long extension, three double slides, £1.—Colonel Malden, Godshill, I.W.

**Lanterns, etc.**—Three-wick lantern, 4 in. condenser, brass sliding front, do for enlarging, 25s.; almost new 5 in. objective, large diameter back combination, with set of tinting glasses, 22s.—Rev. Atkins, Normandy, Guildford.

Optimus 45s. lantern, complete, perfect condition, price 30s.—Ernest Aveline, Amberley, Stroud, Gloucestershire.

**Lantern Slides.**—Capital lantern slides of John Bright's new statue at Rochdale, 1s. each.—S. Ingham, Freshold, Reckdale.

**Lenses, etc.**—Lancaster's half Instantograph lens, good condition, 17s. 6d.—B. C. Kenyon, Davenport Crescent, Stockport.

1B long and 1B short focus Dallmeyer portrait lens, in new condition, price 60s. each. Wanted, 3B Dallmeyer, for cash.—Photo, 107, Lake Road, Portsmouth.

**Negatives.**—Twelve quarter-plate negatives, interesting views, Lichfield, also cathedral, 8s. 6d., free.—25, John Street, Lichfield.

Have a few more negatives to dispose of as advertised last week; results 40 years experience; six for 1s. 3d., post free.—Richford, Wells, Norfolk.

**Sets.**—Great bargains! An amateur wishes to dispose of his photographic apparatus, etc. Call, or apply for particulars.—W., 41, Dunsmore Road, Stamford Hill.

Lancaster's 1891 half-plate Instantograph camera, dark slide, tripod, and R.R. lens, good as new, only 67s. 6d.—53, Slad Road, Stroud. [Trade.]

Half-plate camera, all movements, three double dark slides, book form, Optimus R.R. lens, 7 by 5, Thornton-Pickard time and instantaneous shutter, tripod stand, and stiff canvasscase; in perfect working order and condition; almost new; selling because giving up photography; price £7 10s., or offers?—I. Alston, Southbar, Bothwell, N.B.

7 by 5 Rouch portable camera, three slides, all brass-bound, stereo division and front, Wray landscape lens, Guerry shutter, velvet-lined flat case, price £9 9s.; also Wray whole-plate R.R., price £3 3s.—No. 241, office of this paper, 1, Creed Lane, E.C.

Half-plate Optimus W.A. camera, three double backs, leather case, Watson's tripod; perfect condition; price 130s.; reason selling, working whole-plate.—Dudin, 4, Fenchurch Street, London.

For sale, price £6, nearly new photographic apparatus, consisting of Verge's portable camera, three double backs in leather sling case, complete with tripod, and Ross' rapid symmetrical lens for plates, 4½ by 3½ (the best lens for outdoor photography), pneumatic instantaneous shutter, printing frames, ebonite dishes, cutter, shaping glasses, squeegee, etc.—Apply, F. E. G. B., 2, Bridlington Villas, Hainault Road, Leytonstone.

Billifield half-plate camera, three double dark slides, and waterproof case, three printing frames, three dishes, focussing cloth, compound focuser, half-plate single lens, 5 by 4 rectilinear lens, three-fold tripod, price £7 7s.—F. Jackson, 33, Ashton Old Road, Manchester.

Superior half-plate set of photographic apparatus, consisting of camera (Photo Artists Association), with leather bellows, double swing-back, neck and pinion focussing, extra sliding front, and removable division for stereoscopic work, three double dark-slides, Dallmeyer's R.R. lens, Jackson's instantaneous shutter, Kennett's sliding stand and case with partitions and strap for carrying; cost, net, £13; price 16 guineas. Will exchange camera for quarter-plate size with roll holder.—C. Oxford, Devizes.

Quarter hand-camera, comprising Laverne's detective lens, fixed focus, Eastman's roll-holder, Kershaw shutter, finder. Will exchange for 9 by 7 Optimus R.R., and cash. Also Thornton-Pickard double blind shutter, 2 in., 16s.—Shaw, 5, Great Ancoats, Manchester.

**Sundries.**—AMATEUR PHOTOGRAPHER, first ten volumes, complete, bound, price £2.—Rector, Elm, Frome.

Watson's Cyclist Stand, quite new, cost £1 1s., will take 13s. 6d. cash.—Cooper, 57B, Hubert's Grove, Stockwell, London.

5 by 4 Eastman's roll-holder, with 14 exposures, transparent film, 40s.; Laverne's 5 by 4 Euryscope, f/6, iris, 5½ in. focus, covers and perfectly defines a circle of 9 in. diameter, splendid instrument, with two extra flanges, 37s. 6d.; Shew's Eclipse pneumatic, ever-set, time and instantaneous shutter, to fit above or any lens, 1½ to 1¼ in. diameter, 10s. 6d., cost 20s.; all quite new and guaranteed perfect.—G., 2, Crofton Terrace, Kingstown.

Three strong printing frames, two half-plate and one 5 by 4, half-plate draining rack, quarter-plate lens, Denon camera, without lens, Lancaster's circular shutter, seven light-tight bags, with metal tops, quarter-plate, 10s. 6d.; cheap.—E. Spurge, Romford, Essex.

Sliding stand, leather top, new, 12s. 6d.; over 5 ft., post free; washing tank, up to half-plate, moveable drainer for prints, been used, 10s. 6d.; set of trays, new, included.—Baker, 56, Avenue Road, Herne Bay.

Quarter-plate camera, lens, dark-slide, and tripod, 5 by 4 camera, R.R. lens, six developing trays, two baths, ruby lamp, etc., 30 numbers AMATEUR PHOTOGRAPHER, two instruction books, also a pair of opera glasses in case; the lot, £3.—H. Locke, 7, Lilford Terrace, Sedgwick Road, Leyton, Essex.

AMATEUR PHOTOGRAPHER, 1888, "Dictionary" volume, 1889, 1890, 1891, "Photographic Art Journal," 1890, "Practical Photographer," 1890, '91, "Photographic Journal," 1887, '88, '89, offers? or exchange.—Kilburn, Eastfield, Batley Carr.

Exchange 108 "Bicycling News," 51 "Cycling," 73 "Wheeling," all as new, for anything photographic.—Address, 13, Highbury Park, N.

Lancaster's 1890 quarter-plate Instantograph, one wooden and two metal backs, two tripods, two-fold and three-fold, canvas case, and sundries, 45s., or offer.—M. Tregilgas, 39, Lavender Hill, S.W.

Morley's half-plate Star camera, three double slides, Adams' lightning stand, six printing frames, and waterproof case, £7.—Rand, 17, Spring Gardens, Trafalgar Square.

Dark slides, three halves, Instantograph, 6s. 6d. each; canvas camera bag, 3s. 9d.; canvas stiff case, 7s. 3d., new; approval.—Adams, 90, Hutton Garden.

Large print washer, diameter of circle 2 ft., tubing and brass nozzle connecting tap, nearly new, cost 30s., sell 20s.—C. Creasy, Faircross, Springfield, Chelmsford.

Magnificent solo violin, very bright and mellow tone, in perfect playing order; also fully badge-lined case and good bow; price 15s. 6d.; genuine offer, and sent on approval; kindly write for particulars.—Miss Garland, 84, High Street, Maldon, Essex.

"Photographs of the Year" (six photogravures), Reporter for October, 1889, February, August, October, November, December, 1891, 8 vols of AMATEUR PHOTOGRAPHER (six bound), containing instructive articles by Robinson, Wall, Blanchard, Harrison, Clark, Bothamley, Pringle, and others, forming valuable reference library. What cash offers? Quarter-plate or hand-camera wanted.—C. Oxford, Devizes.

## WANTED.

**Cameras, etc.**—Lancaster's snap-shot and Rover quarter-plate cameras, complete.—Alex. H. Moore, Newtownards.

**Cameras, Lenses, etc.**—Wanted, whole-plate brass-bound, double-extension, square leather bellows camera, all movements, also accessories, rapid rectilinear lens (Ross, Dallmeyer), and 2A or 3A portrait Dallmeyer; approval.—Beard, Maybury, Surrey.

Wanted, camera, lens, tripod, etc.; exchange 15 ct. gold watchguard and locket; cost £3; send description.—Yates, 38, Ey Road, Seacombe, Cheshire.

**Hand-Cameras, etc.**—Wanted, No 3 Kodak, Regular or Junior.—E. Phillips, Bridge Street, Leatherhead.

Kodak camera wanted, No. 3 Junior preferred; state lowest cash price.—No. 241, office of this paper, 1, Creed Lane, E.C.

**Lanterns, etc.**—Wanted, optical lantern in exchange for well-mounted anatomical microscopic slides.—Hallam, Devonshire House, Beauchamp Road, Clapham Junction.

**Lenses, etc.**—Wanted, cabinet portrait lens; cheap; also background, interior; approval.—2, Nicholas Croft, High Street, Manchester.

Wanted, Wray's, or other first-class quarter-plate rectilinear lens, 4 to 4½ in. focus, Iris diaphragms.—H. Sprunt, 75, Loampit Vale, Lewisham.

Wanted, Suter 3B, Wray half-plate R.R. lens, Suter No. 3, Suter landscape.—Kelly, Lodge, Monrath, Ireland.

Wanted, half-plate rectilinear lens in exchange for very good violin, bow, and case.—Twemlow, Wesley Cottage, Sandbach.

Wanted, half W.A. lens, cheap.—F. Thornton, 15, Brounley Road, Beckenham.

**Sets.**—Half-plate set, first-class; particulars of lens, make rs, and price.—H., 34, Duncan Terrace, London, N.

Wanted, half-plate set, good maker; will exchange new Rational bicycle, or sell.—John Lowden, 37, Maryland Road, New Town, Stratford, Essex.

**Sundries.**—Wanted, Wool's patent print washer; must be cheap; state size and condition.—Pickard, 79, Piccadilly, Manchester.

Roll-holder, 5 by 4, Eastman's, latest pattern, perfect condition.—Tytler, 8, Grosvenor Street, Edinburgh.

A SMALL first class BUSINESS for DISPOSAL, suitable for a Beginner or Amateur.—Address, D. W., 215, The Grove, Hammersmith. [Trade.]

## AMATEURS' LANTERN SLIDES.

THE Advertiser would be glad to hear the terms of an Amateur willing to undertake the DEVELOPMENT OF KODAK NEGATIVES, together with Printing, either on Paper or his Lantern Slides.

KODAK, 163, QUEEN VICTORIA STREET



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No. 386. VOL. XV.]

[PRICE TWOPENCE.

"To hold as 'twere the mirror up to nature,"—*Shakespeare*.

It may possibly be of interest to our readers if in connection with the Chicago Exhibition we call attention to the Polytechnic tour which is proposed for visiting the Exhibition in 1893. Arrangements have been made with the Inman and International Steamship Company for the conveyance of excursionists from Liverpool, and with the Hamburg and American Steamship Company for transit of passengers from Southampton. Two days are to be spent in New York, one in Washington, and thence to Chicago, where about five days will be spent. The return journey will be *via* Buffalo, Niagara, Albany, and the Hudson River Railway to New York. The fare and full arrangements may be obtained on application to the Secretary, Mr. Robert Mitchell. Several Continental tours are also being arranged for this summer, some of which are well worth the attention of our readers.

LETTERS.—Aluminium (Quadragesimus)—Matt-surfacing Prints (Maza)—Enlarging (Ammr Tugher)—Actinometers (Chas. H. Brown)—West London Photographic Society (Hodges, Winter, and Rogers)—Rapidity of Single Lens (B. T. Nunn)—The Free Portrait Dodge (Lola).

ARTICLES.—Chemical and other Experiments in the Lantern (Lucifer)—Photographic Procedure (Wall)—Elementary Photography (Hodges)—The Open Sesame of Successful Photography (Maclean)—On Toning Silver Prints with Platinum—A Photographic Society for North Wales.

Reviews.—Auleitung zur Photographie (Pizzighelli)—Handbuch der Photographie (Pizzighelli)—Photographic Mosaics (Wilson)—The Optical Lantern as an Aid to Teaching (Bothamley)—How to Make Transparencies, The Gelatine-bromide Paper Process, The Wet Collodion Process, A Set of Labels and Exposure Note Book (Mawson and Swan).

OUR VIEWS.—Chicago Exhibition Tour—Official Notice of Chicago Exhibition—Photography in Natural Colours—Death of Mr. Edwin Cocking.

SOCIETIES' MEETINGS.—Brechin—Bristol—Brixton and Clapham—  
Camera Club—Chiswick—Croydon—Devonport—Durham City—  
East Southsea—Exeter—Faversham—Great Yarmouth—High  
School, Glasgow—Holborn—King's Lynn—Leigh—Lewisham—  
Leytonstone—Liverpool Camera Club—Midland Camera Club—  
Newcastle—North London—North Middlesex—North Surrey—  
Polytechnic—Putney—South Hornsey—South London—  
Southsea.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (*All Communications should reach the Editor by Tuesday.*)

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (SALE AND EXCHANGE Advertisements, at the charge of *Three Words for one Penny*, can be received as late as WEDNESDAY MORNING.)

**"Amateur Photographer" Monthly Competition No. 34.—**  
**"PORTRAITURE AND FIGURE STUDY."** Latest day, March 21st.  
**—Prizes:** Silver and Bronze Medal, with Ribbon and Clasp.  
 One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, April 15th.)

WE have received the following notice from Sir H. True-  
man Wood, the Secretary of the Royal Commission for the  
Chicago Exhibition, 1893 :—

“Photographic apparatus and photographs are classified under Group 151 (instruments of precision, experiment, research, and photography, photographs), which is included in the Department of Liberal Arts.

\* Photo-mechanical prints and processes, photogravures, etc., are classed under Group 76 (photo-mechanical and other processes of illustrating), which is, like lithography and printing generally, included in the Department of Machinery.

"All the photographic exhibits, however, will be placed together in the portion of the Liberal Arts and Manufactures Building allotted to the British section.

"Screens will be fitted up for the exhibition of photographs, photogravures, and other pictures produced by photographic methods.

"For the space on these screens the charge will be 2s. 6d. per square foot, with a minimum charge of £2.

"Exhibitors desiring to erect their own screens or stands can do so. In that case they will be charged for the ground they occupy according to the same scale as other exhibitors, viz :—

|                                                       |     | Per sq. ft. |
|-------------------------------------------------------|-----|-------------|
|                                                       | s.  | d.          |
| For spaces not exceeding 100 sq. ft. ....             | 5   | 0           |
| For space exceeding 100 sq. ft. and not exceeding 200 | 4   | 6           |
| " " 200 " " "                                         | 300 | 4 0         |
| " " 300 " " "                                         | 500 | 3 6         |
| " " 500 " " "                                         | 750 | 3 0         |
| " " 750 " and upwards                                 | 2   | 6           |

The minimum charge will be £5.

"All goods intended for the Exhibition will be admitted duty free, but on anything sold the usual Customs duty will have to be paid.

"The English railways have undertaken to carry goods for the Exhibition at half-rates, and several of the more important steamship companies have consented to convey them at the reduced rate



of 11s. per ton. The American railways will charge their ordinary rates on goods to the Exhibition, but undertake to bring them back free.

"The Exhibition will be opened on May 1st, 1893, and closed on October 30th, 1893.

"Applications for space in the British Section must be made upon forms to be obtained from myself, at the Society of Arts, John Street, Adelphi, London, W.C., and I shall also be very pleased to supply any further information. The forms should be sent in properly filled up, not later than February 29th, 1892, and addressed to me as above. After the end of this month, applications can only be received subject to space being available."

—♦♦♦—

Dr. W. H. Vogel makes the following announcement in a letter to a recent number of "Anthony's Bulletin":—

"Photography is progressing rapidly. The great problem of photography in natural colours is no longer a problem; it has been solved after my principle through the efforts of Mr. Ulrich and my son, Dr. E. Vogel. The results are such that the director-in-chief of our National Gallery, Mr. Jordan, has given permission to reproduce all the pictures of the gallery by this process, and in this way save all the pictures, which, in the course of time, may be injured by decomposition of colours, varnish, etc. You will see proofs of the process pretty soon."

We, like everybody else, shall await with interest any further notice. According to Mr. F. E. Ives, of Philadelphia, however, Professor Vogel's principle is all wrong.

—♦♦♦—

The Birmingham Photographic Society will hold their annual members' exhibition and competition on April 5th, 6th, and 7th. Exhibitions of apparatus and lantern shows will be given every evening. There are thirty-one classes in all, and thirty-one prizes, including twenty-six silver medals, one electro-silver cup, and two hand-cameras, besides certificates, the number of which is only limited by the discretion of the judges. It seems to us that at least there are enough prizes offered.

—♦♦♦—

MESSRS. BEASLEY AND TABRUM, the Hon. Secretaries of the Photographers' Benevolent Association, request us to announce that the annual general meeting of the Association will take place at 8 p.m., on the 26th inst., at No. 50, Great Russell Street, Bloomsbury, in the rooms kindly lent by the P. S. G. B. The offices of the Association are now removed from No. 65 to No. 55, Chancery Lane.

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We regret that in noticing the specimens of Kallotype printing in our last issue we inadvertently gave the address as "Sparkbrook, Manchester," instead of Sparkbrook, Birmingham, which it should be.

—♦♦♦—

A NEW society has been formed for North Wales, and a report of the meeting will be found on another page. The headquarters of the society are the News Rooms, Mostyn Street, Llandudno, and any photographic workers in that neighbourhood will be welcomed.

It is with regret that we have received intimation of the death of Mr. Edwin Cocking, on Friday, the 12th inst., from an attack of apoplexy. Mr. Cocking was best known as the Assistant Secretary of the Photographic Society of Great Britain, and was always ready to give any information or assistance in his power to members and strangers. Quiet and unassuming, he had, however, made many friends in photographic circles.

## NOTES ON THE OXALATE DEVELOPER.

The active principle of the oxalate developer is the compound formed by the addition of the ferrous sulphate to the potassium oxalate. This compound is true potassium ferrous oxalate— $\text{Fe}(\text{C}_2\text{O}_4)_2 \cdot \text{K}_2 + \text{H}_2\text{O}$ . Ferrous oxalate may be obtained as a granular yellow powder, which is stable in ordinary air, and soluble in excess of alkaline oxalates with the formation of double salts as stated above. The solution of potassium ferrous oxalate, when neutral or alkaline, soon oxidises, forming basic ferrous oxalate, which is precipitated as a red-brown powder, and also forms beautiful emerald green crystals of potassium ferric oxalate,  $\text{Fe}_2(\text{C}_2\text{O}_4)_3 \cdot \text{K}_6 + 6\text{H}_2\text{O}$ , which is tolerably soluble in water, and is decomposed, both in the dry and in the aqueous solution, into carbonic acid gas and ferrous oxalate. This salt, potassium ferric oxalate, may be utilised for the reduction of too dense negatives, bromide prints, and enlargements.

Neutral oxalate of potassium,  $\text{K}_2\text{C}_2\text{O}_4 + \text{H}_2\text{O}$ , is a colourless crystalline salt, which dissolves in three parts of cold water. The following table will give the proportion of solid salt, provided the specific gravity or degree on Beaumé's hydrometer be known.\* Commercial oxalate of potash, if obtained from a

| The solution contains |                                            |   |   | Sp. Gr. at 15 deg. C. | 'Deg. Beaumé. |
|-----------------------|--------------------------------------------|---|---|-----------------------|---------------|
| 1                     | part oxalate of potash to 3 parts of water |   |   | 1.159                 | 20.5          |
| 1                     | " " " 4 " " "                              | " | " | 1.126                 | 16            |
| 1                     | " " " 5 " " "                              | " | " | 1.103                 | 13.5          |
| 1                     | " " " 7 " " "                              | " | " | 1.076                 | 10            |
| 1                     | " " " 10 " " "                             | " | " | 1.055                 | 7.5           |

dealer in photographic chemicals, may be relied upon as being sufficiently pure for all purposes; but the following general tests may be used with advantage if any doubt of the purity of the sample is entertained. One part of the solid salt should dissolve in three parts of distilled water at 60 deg. Fahr., and form a perfectly clear solution; it should be neutral or faintly acid to litmus paper; to the solution, well acidified with pure nitric acid, the addition of a few drops of solution of nitrate of silver should not cause more than a faint opalescence, thus showing the absence of chloride salts.

Ferrous sulphate, sulphate of iron, or protosulphate of iron,  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ , is met with as a bright green crystalline slightly damp salt. One part dissolves in three parts of distilled water, forming a pale green solution, which should be acidulated with one drop of strong sulphuric acid to every one hundred c.cm.; or five drops of acetic acid or two to five grammes of tartaric or citric acids may be used in the place of the sulphuric acid. The addition of these acids acts as a preservative to the iron solution, and also as a preventive of fog in developing; but the addition of too much sulphuric or acetic acid causes a precipitation of ferrous oxalate when the developer is mixed. Tartaric and citric acids have no such action. The only important point in the use of the ferrous sulphate is to see that it is not strongly oxidised, which is evident by a brown powder adherent to the green crystals. It is advisable to always allow a slight excess in weighing out this salt, and place it on a small sieve or piece of coarse muslin, and affuse once with distilled water to remove this adherent yellow-brown powder, which is basic oxysulphate of iron, the same subsalt being formed in old ferrous sulphate solutions by the action of atmospheric oxygen. Numerous dodges have been suggested for preventing this change, but none are very efficient; and it is far preferable to take a little more trouble, and mix the solution fresh more frequently.

As restrainers for the ferrous oxalate developer many additions have been suggested, such as iodides, chlorides, ferric chloride, ferric oxalate, sugar, glycerine, dextrine,

\* "Eder Ausführlich, Handbuch, 1890," p. 109.



gelatine, and large quantities of tartaric and citric acids; but the most general are the bromides of potassium and ammonium, which act to about an equal degree. As accelerators, a drop or two of saturated solution of hypo, or a small addition of solution of bichloride of mercury, have also been suggested. The first is certainly not suitable for bromide paper, but we have found no ill-effects from the addition of ten drops of mercuric chloride solution 1:200 per 100 c.cm. of developer, and think, if anything, as pointed out by Pocklington (1884), that more velvety blacks and clearer shadows are obtained by this addition.

#### THE REGENERATION OF OLD USED FERROUS OXALATE DEVELOPER.

A ferrous oxalate developer which has been used several times, or which has been allowed to stand in an open dish or measure, loses to a great extent its developing power. This loss of power is caused, first, by the increase of bromide salt, due to the decomposition of the silver sub-bromide; and secondly, by the absorption of oxygen from the air with the formation of ferric oxalate, which is not only an extremely energetic restrainer, but will in time actually destroy the invisible image. Lagrange (*Phot. Wochenbl.* 1882, p. 49) suggested the following method of regenerating such old developer: 500 c.cm. of the old developer, 15 grammes of oxalic acid, 15 grammes of bicarbonate of potash, and 5 grammes of iron powder (*ferrum redactum*), are placed in a bottle capable of holding 1,000 c.cm., and the whole well shaken and allowed to stand for some hours with frequent agitation. The developer may then be used again, although it works somewhat more slowly on account of the increased quantity of bromide, which arises for the above-stated reason.

Another method of effecting the same object is formed on an observation of Eder's (1879), that light reduces ferric salts to ferrous; and Audra, utilising this fact, recommended the addition of 3 to 5 c.cm. of a 3 per cent. solution of tartaric acid to a litre of the old developer, which should be placed in bottles in bright sunlight. Here again, however, we have the objection of the increase of bromide, and its action is intensified by that of the tartaric acid, which makes the prints hard and of great contrast.

The most satisfactory methods of utilising old oxalate developers are, first, Eder's method of recovering the oxalate of potash; and secondly, a method, the author of which we cannot trace, of forming potassium ferric oxalate and utilising this salt as a reducer for over-dense negatives and prints. Eder's method is given from p. 458, 3rd edition, of his incomparable "*Handbuch*," vol. iii., which was first proposed by him in 1880: "The old developer, together with the green crystalline deposit, is heated in a capacious porcelain dish, and pure carbonate of potash is added till the liquid is strongly alkaline. Then one adds a few pieces of caustic potash, boils and tries whether the solution will filter clear; if not, more caustic potash is added. The filtrate from the precipitated iron is, comparatively speaking, free from iron, and consists of a tolerably pure solution of oxalate of potash, which contains excess of carbonate of potash. The solution is neutralised with oxalic acid and used immediately, or evaporated, and solid oxalate of potash allowed to crystallise out. Any bromide of potash present may be precipitated, after the separation of the iron, by the addition of 2 to 3 c.cm. of a 10 per cent. solution of nitrate of silver to every 100 c.cm. of liquid, and be removed by filtration.

The second method is given from a prize essay of the Chatauqua (U. S.) School of Photography by T. H. Odierne: "If ferrous oxalate developer is allowed to stand

for some time in an open vessel, the green crystals (potassium ferric oxalate) will form on its sides and bottom spontaneously, and may be easily separated from the solution; but when it becomes desirable to convert the whole amount of the solution into the ferric oxalate double salt, proceed as follows: Pour the solution into an evaporating dish or bowl, and allow it to evaporate slowly in a slightly warmed, dark, or dimly-lighted place. When dry, add to the brown, powdery residue about one-fifteenth of its weight of oxalic acid and from four to six times its volume of water, boil for a few minutes till all is dissolved, pour into a flat dish, cover it with a sheet of paper, and set it in a cool place overnight. In the morning the bottom of the dish will be covered with crystals of potassium ferric oxalate. After removing the mother waters wash the crystals, and dry them by slight heat between blotting paper. The salt is sensitive to light, and should be kept in the dark or well-protected bottles. Light reduces the ferric to the insoluble yellow ferrous oxalate. After short exposure to direct sunlight the green crystals will cover with this substance in the form of a yellow powder. It may be stated here that the quantity of oxalic acid added to the brown powdery residue is of somewhat greater importance than supposed from published formulae. The proportions of acid prescribed have proved repeatedly to be far in excess, in which case free oxalic acid will crystallise simultaneously with the ferric salt. The usual test with litmus paper will indicate the amount of acid required."

It is a question whether to the amateur who does not use inordinate quantities of oxalate developer any of the above processes are worth the trouble; and we venture to suggest that by far the best use of old oxalate developer will be found in its action as a disinfectant down the household drains—part being retained to add to fresh developer, when its action as a restrainer is far superior to bromide.



The Richmond Camera Club gave their first soirée on Friday, the 19th inst., it having been postponed from the January 15th, in consequence of the sad event of the day before. In spite of the inclemency of the night, guests turned up in good force, and an excellent programme was got through with a briskness and punctuality which reflect great credit on those responsible for the management. In the musical portion of the entertainment, Mr. Richardson, the late Secretary of the Club, was unfortunately prevented by a bad cold from singing, but his part in the quartettes, of which he had the arrangement, was efficiently filled by Mr. Stevens, while his solos were sung by Mr. Garratt. Solos and glees were alike admirably given, and the two short recitations left little to be desired. The show of lantern slides, divided into four parts, was sandwiched in between the musical items and seemed to be thoroughly enjoyed by the audience. The slides shown were as a whole very good, though some were scarcely up to the mark. The best were undoubtedly those of the President, Mr. Cembrano, which were of uniform excellence. The Norwegian scenes of the Messrs. Bickerton and Mr. Faulkner's woodlands were well-chosen pictures of high technical merit. The exhibits of Messrs. Ardseer and Arthur Hunter were of more varying quality, but comprised many first-rate slides. Mr. Ennis produced some good atmospheric effects, as did Mr. Ramsay in some of his marine studies. Venetian and Alpine views by Mr. Davis and miscellaneous pictures by Messrs. Behan Such, Perry, and Kelsey completed the list. The slides, were described in a pithy and humorous manner by Mr. Such, and the lantern was manipulated by Mr. R. R. Beard with the assistance of Mr. Cembrano. A word of praise must be accorded to the very tasty programmes.

**Sheffield Camera Club.**—The inaugural meeting was held on the 16th inst., the President, Mr. G. E. Maleham, in the chair. In a short address the President, in reviewing the work of the past session, spoke of the great progress of the art in recent years. Referring to the success of the club, he urged upon the young members the advantage of bringing before the meetings any difficulties they might meet, so as to promote discussion, which often proved alike instructive to the more advanced as well as the beginner. The remainder of the evening was taken up by an exhibition of prize slides, which were much appreciated by the audience.



## Letters to the Editor.

### ALUMINIUM.

SIR,—As some of your correspondents were good enough to put me on the right track for procuring aluminium, it may interest them as well as other readers of the *AMATEUR PHOTOGRAPHER* to learn the result of my enquiries. One letter was returned, noted "gone away." In a second I was told, "We shall be glad to quote for whatever quantity you require."

In the third case a list was enclosed from which, for the information of your readers, I extract the following prices per pound, 98 to 99 per cent. pure:—

Sheet B.W.G., 0 to 14, 8s. 9d.; 15 to 24, 9s. 3d.; 25 to 30, 10s. 3d.

Wire, B.W.G., 0 to 14, 10s. 6d.; 15 to 24, 10s. 9d.; 25 to 30, 11s. 6d.

Rod,  $\frac{1}{4}$  in. to  $\frac{3}{8}$  in. 0 to 14, 10s.;  $\frac{1}{2}$  to  $\frac{3}{4}$  in., 9s. 8d.;  $\frac{3}{4}$  in. to 1 in., 9s. 2d.

As I was passing through Birmingham, I thought it well to pursue my enquiries. I was directed to a shop in Warstone Lane which I could not find; but seeing a likely shop in the immediate neighbourhood, I went there to enquire. My questions were answered with some evasion and reluctance, and, upon stating that my idea of the price was from 8s. 6d. to 10s. a lb., I was laughed to scorn, and told that aluminium in ingots was 3s. 6d. an ounce! Eventually, I bought some ingots warranted 99 per cent. at 4s. a pound.

When I was last in London I procured some sheet aluminium, cast rods, and castings for milled heads from stock patterns, from the Phoenix Engineering Company, 40, Prince's Street, Stamford Street, S.E.; these, including a triangular tripod head with castings for nut and screw, cost me 21s.; the quantity was considerably more than I shall require for one half-plate camera, but as I had had no experience in working the metal, I thought it best to allow for wasting.

Being in Birmingham again, about a fortnight ago, I extended my inquiries. At a metal and tube shop I was asked for aluminium ingots 8s. 6d. an ounce! This I was told was absolutely pure, but upon pressure it came down to 99 per cent. A camera manufacturer was good enough to supply me with a small quantity of sheet at 5s. a pound; at another shop I was offered ingots at 2s. 9d. a pound.

It is quite beyond my power to explain these discrepancies.—Yours faithfully,

QUADRAGESIMUS.

\* \* \* \*

### MATT-SURFACING PRINTS.

SIR,—A week or two ago you kindly inserted a query of mine with regard to small bright spots appearing on gelatin-chloride prints after being squeezed to ground-glass. Since then I have been making experiments, and perhaps the results may be useful to other beginners who have met with the same difficulty. I find that by using celluloid instead of glass plates, and French chalk instead of talc, I not only get a better matt-surface, but I get a print entirely free from the small bright specks above referred to. Stripping is also much easier when celluloid plates are used.—Yours, etc.,

MAZA.

\* \* \* \*

### ENLARGING.

SIR,—I am very happy to reply to any queries which may suggest themselves in connection with my article on this subject. To take "A. B.'s" in turn:—

(1) The frosted glass, which is referred to as having been let into one of the boards, is put into the same place as the bromide paper will afterwards be placed, care being taken to put one of the cut-out boards before it—between it and the lens—and it may occupy exactly the same position as the bromide paper will.

(2) I first used a double plano-convex, out of an opera-glass, stopped down by pasting black paper on it, and cutting out a hole in the centre. I did fairly well with that. Then I bought an R. R., for my hand-camera, to use instead of the doublet, and I also used it for the enlarging camera. It is sold to cover quarter-plate, but I use it successfully for 5 by 4, and find it will even cover half-plate, when, of course, it would become a so-called wide-angle. Full aperture, about  $f/8$ , does not answer well for enlarging, while I find a small stop tends to destroy details in the shadows. Try several of your medium stops—say  $f/11$ .

(3) When enlarging by lamplight, I simply turn the lamps up and down; when using daylight, I slip a piece of card before the negative, and, when the paper is in position, simply draw the card away.—Yours, etc.,

AMMER TUGHER.

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### ACTINOMETERS.

SIR,—I have read with interest the letters in your recent issues on the "Actinograph," or, as I prefer to call it, the "Actinometer," as it is a measurer of the actinic power of light. It appears to me that an actinometer which depends in some of its factors on the judgment of the individual or on a set of tables arranged for each day and hour of the year is an imperfect instrument. The judgment of a person of slow phlegmatic temperament will not be the same as that of one of an excitable sanguine temperament, or of the man who has been at photography twenty years and the tyro of a few months.

Tables of the actinic power of light on a given day and hour, dependent on the position and height of the sun, in the north of England, would scarcely be applicable on the Italian Riviera or in Cairo on the same day.

An instrument to be universally available to the various intelligences and experiences of amateurs must be free from the necessity of individual judgment or of tables. This desideratum, I believe, is to be found in the "Watkins Actinometer." I can say from experience that when exposures are made exactly in accordance with the indications of the instrument, success is the rule and failure the rare exception. The factors used in the instrument are:—A, the actinic power of the light. This is arrived at by the exposure of a slip of sensitive paper until it becomes the same colour or depth of tone, as an accompanying disk of colour; at the same, or during the time counting the second beats of a chain pendulum. The next factor is P, the speed of the plate about to be used. Then S, the subject. In this an ordinary landscape bit, a street scene, or piece of architecture would be set at 100; an open distant view, or a subject by the sea, would be 50, and so on. The next factor is D, the diaphragm or stop. The factors are indicated by moveable rings on the instrument, and on setting D, the last one, the amount of exposure required is indicated. Here we have an actinometer equally effective in any light or latitude, independent of tables or of judgment, except as regards the similarity of colour of two bits of paper.

The true value of the stop must be known. This can be easily arrived at by dividing the space from the lens to the focussing glass by the diameter of the stop. The speed of the plate must also be known. Watkins gives a P, or plate number, for the different makes of plates and films, or for different sensitometer numbers; for instance, Eastman's films sensitometer number 25, would be P or plate number 40. In practice the thing is as simple as A B C. I have used the Watkins actinometer in England, South Germany, and Italy for the past two years, and find that when I work exactly to its indications the exposure is right. Using the actinometer, Fitch's zylonite films, of which it is impossible to speak too highly, and Dr. Andresen's eikonogen cartridges for developing, I get most perfect negatives, whether it be the picturesque architecture of an Italian village, a forest scene amongst the olives, or a coast scene with tumbling breakers.—Yours, etc.,

CHARLES H. BROWN.

Bordighera, Feb. 22nd, 1892.

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### WEST LONDON PHOTOGRAPHIC SOCIETY.

SIR,—In reference to the letter from Mr. H. Miller which appears in your last issue, will you allow us to suggest to him and the gentlemen associated with him in forming this new Society, the advisability of joining forces with the West London, which, as you know, takes rank with the leading suburban societies, and includes among its members not only a large proportion of beginners, but also men of acknowledged standing in the photographic world, who are always ready and willing to contribute their knowledge to the common good. Having been in existence for several years, during which time much important work has been accomplished, the executive have gained some experience in organising exhibitions, etc., the full advantage of which the gentlemen composing the new society would reap.

The West London has a membership of upwards of seventy, more than thirty of whom live in Chiswick and the neighbourhood, and it was on this account chiefly that the locale of the Society was changed from Hammersmith to Chiswick. It may



also be mentioned that since the change has been announced about ten new members, irrespective of the new society, have signified their desire to join the West London.

Under the circumstances we would venture to suggest, on politic grounds alone, the advisability of the promoters of the new society amalgamating with the West London.

It may be mentioned that the undersigned were deputed by the Council of the West London to make enquiries and endeavour to obtain information as to the new society, but up to the present they have not succeeded in meeting with any of its members; they have, however, in the course of their inquiries met several gentlemen who have consented to join the West London.

Our next meeting takes place on Friday, the 26th March, and it is a lantern night. We would suggest, therefore, that the promoters of the new society should meet us then at our new meeting place, "The Chiswick School of Arts and Crafts," Bedford Park, with a view to an amicable arrangement, which will be in the interests of both parties being made.—Yours truly,

JOHN A. HODGES (Vice-President).

CHAS. WINTER (Councillor).

W. S. ROGERS (Assistant Secretary).

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#### THE RAPIDITY OF THE SINGLE LENS.

SIR,—While thanking Mr. Hodges for his courteous and lucid exposition of the comparative merits of the doublet and the single lens, I cannot help thinking that he is a little hard on the latter. Can it be said, for instance, that the single is *non-aplanatic*, while the doublet is aplanatic, and gives a flat field without a diaphragm? Surely the single is only *less* aplanatic than the other, and necessitates a *smaller* diaphragm than it to cure its spherical aberration.

Then, again, many workers with the single lens will agree with me in considering  $f/15$  to be a low estimate of the effective aperture of such a lens, and its alleged brilliance to be more than theoretical. At the same time, I must disclaim any desire to run counter to the advice of so experienced an authority as Mr. Hodges. Undoubtedly the rectilinear is the most useful all-round lens which one can possess; it was only that justice might be done to the good qualities of the single lens that I ventured to criticise Mr. Hodges' notice of it.—I am, etc.,

Edinburgh, Feb. 20th.

B. T. NUNNS.

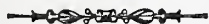
\* \* \* \*

#### THE FREE PORTRAIT DODGE.

SIR,—In reference to the remarks in your paper on the "free portrait dodge," I think it is only fair to state that all associations which guarantee to supply an enlargement of any photograph free are not the swindles your correspondent would lead one to suppose. Last autumn I received a circular from one in the south of England, and an order for me to fill up, the association guaranteeing to make an enlargement from any photograph I sent, free for nothing, on condition I would show it to my friends. I sent a photograph, and in due course of time was told the enlargement was ready, but they begged my permission to frame it before sending it, so as to ensure its having a suitable frame, and promising that if they received three orders through me, they would refund the price of this frame. I can only say that the enlargement was admirable, and that my friends and I have altogether had five from this association all equally good, all free, with the exception of the frames, for which we have paid half the price stated in their catalogues. I grant that the association may make considerable profits on the frames, and so repay the cost of the enlargement, but I can only say that friends who have seen two, for which I have just paid 8s. 6d. each, beautifully framed in black and gold frames, say that they are well worth 21s. anywhere. I do not name the association except in confidence to the Editor, having not the slightest interest in it, but I wished in justice to let it be known that in one case, at the least, the guarantee of a "free portrait" was honourably carried out.—Yours, etc.,

LOLA.

NOTE.—It is interesting to note that the association referred to by our correspondent of last week, and by the writer of the above letter, are the same. We had a visit from the local Police Superintendent, who has given us some information which we shall make use of next week.—ED. AM. PHOT.



**The Photographic Club.**—We have received the annual report, list of members, and rules of the above, and it contains some very useful notes of discussions on various subjects, and a very useful paper on the theory of development, by Mr. A. M. Levy, which we hope to reprint in a subsequent issue.

## Chemical and Other Experiments in the Lantern.

BY LUCIFER.

I SUPPOSE there are some individuals who have lanterns and who have not Mr. Hepworth's book, and who, perhaps, may not know that many very pretty experiments can be readily shown by means of an optical lantern. Such often prove a pleasing variety, especially if the audience happens to include some who are not very enthusiastic photographers. If the lantern has an open front, *i.e.*, open at the top, any experiments of this kind are easily performed; but if it be one into which the slides are inserted at the side some arrangement must be made for dropping fluids into the tank which contains the liquid to be experimented on, and which replaces the ordinary carrier. In my own lantern the tin frame which carries the condenser and the slides happens to be open at the *bottom*, so that by simply reversing it full access is obtainable to the tank.

Tanks may be bought at opticians' for two or three shillings, but can very easily be made at home for four or five pence. Take two pieces of glass narrow enough to slide into the lantern front, and about 6 in. long. For an open-front lantern half-plates suit admirably. Place between them a piece of rubber gas tubing, roughly following the outline for three sides, and clip all together with three stout rubber bands, one at each end and one along the bottom. A tank so made is practically watertight, and can be easily cleaned after use and put together again in a minute or two.

The experiments are almost endless. A very pretty one, though scarcely chemical, is to fill the tank with water and focus on the screen; then introduce a few drops of the various aniline or resorcin colours, red, green, mauve, etc. They descend in wavy branching spirals, and, of course, appear on the screen to ascend, usually suggesting sky rockets. By mingling several colours a very pretty effect is obtained.

Mixtures of a great number of substances, themselves soluble, produce insoluble precipitates, *e.g.*, ferrocyanide of potash and ferrous sulphate, when combined, give rise to Prussian blue. Silver nitrate and potassium bichromate form the deep red silver chromate. For screen work the solutions can hardly be too dilute, as otherwise the precipitates are too opaque. Again, put some water acidulated with sulphuric acid into the tank, and drop in a few fragments of zinc. Multitudes of bubbles of hydrogen are given off, chasing each other across the screen. With a sufficiently strong battery, water can be decomposed into oxygen and hydrogen.

One of the most telling experiments is to make a solution of litmus, with which the tank is filled; projected, it appears a deep blue colour. Introduce a little vinegar or other weak acid; it immediately turns red, the effect strongly reminding one of a volcano. A few drops of ammonia or any alkali will replace the blue tinge.

There is nothing new in all this, but perhaps it may be new to one or two of your younger readers. I was myself surprised to find how easily water-tight tanks could be made in the way indicated. They are also well suited for projection of the aquatic larvæ of many insects, waterfleas, and similar creatures, and being rather narrow, the can be easily kept in tolerable focus, and squirm about the disc of light in a manner most comical. Unfortunately, the lantern season, winter, is not the time such things are most easily obtained, being then usually lying dormant in the mud. A thistle funnel and one or two pipettes are very convenient for tank experiments.



## Reviews.

*Anleitung zur Photographie.* By G. Pizzighelli. Fourth edition. Published by Wilhelm Knapp, Halle a. S.

This little elementary instruction book is well known as one of the standard German works, and that it is now in its fourth edition is sufficient proof of its appreciation. The book is divided into four sections, treating respectively of (1) apparatus, (2) the negative and its formation, (3) printing, and (4) the practical carrying out of photographic operations. The work is well printed, and contains several explanatory woodcuts and a fine photogravure. The work forms a suitable introduction to the more elaborate treatises of the same and other writers.

*Handbuch der Photographie.* Vol. ii. Second edition. By G. Pizzighelli. Published by Wilhelm Knapp, Halle a. S. Price 8s.

Under the title of "Die Photographische Prozesse," the author has given us a complete and advanced guide to the various processes necessary for the completion of a perfect picture from the preparation of the emulsion to the finished print. Brief and clear explanations are also given of the various photo-mechanical processes, printing upon wood-blocks, textile fabrics, etc. Pizzighelli has long been known as the author of a very complete book upon platinotype, and therefore we are not surprised to find in this work very full and complete directions for this process, combining also the very latest researches of Mr. Willis, the English discoverer of the process. Each section is complete in itself, and includes very full and complete notes upon the failures, their causes and remedies. Whilst totally distinct from the exhaustive "Handbuch" of Dr. Eder, Pizzighelli's may well be considered the most practical work yet extant in the German language. Theory plays but a very secondary part, and yet sufficient is included to enable the student to grasp the leading principles of the various operations.

*Photographic Mosaics.* Edited by Edward L. Wilson, New York.

This annual little friend has come to hand in a far handsomer cover than usual. The Editor contributes a useful summary of the year's art and work, and numerous practical articles by the leading writers of the day are also given. About twenty process block illustrations are included, some of the best being from negatives by Mr. A. R. Dresser, and illustrating his article on "Hand-cameras." H. P. Robinson, Chapman Jones, Eder, Vogel, Vidal, and Burton also contribute valuable pieces of a good mosaic.

*The Optical Lantern as an aid in Teaching.* By C. H. Bothamley. Published by Hazell, Watson, and Viney, Ltd., 1, Creed Lane, E.C. Price 6d.

Mr. Bothamley has had the advantage of practically testing the efficacy of the optical lantern as an aid to teaching when holding the post of lecturer and demonstrator on chemistry in the Yorkshire College, Victoria University, and in this little work now endeavours to explain in a clear, concise manner how others may make use of the same means to enable "teachers as a body" to recognise "how valuable an assistant they have ready to their hands in the optical lantern." The author enters into no elaborate and scientific explanation of the principles involved in the construction and use of the lantern, but sets to work in a workmanlike and practical manner, evidently learnt from actual experience, to explain the best method of carrying out the furtherance of the plan for which purpose the book was written.

Numerous explanatory diagrams and cuts illustrate the text where necessary, and the book is well printed, and will prove of great service, not only to teachers, but even to photographic lecturers.

*How to Make Transparencies, Lantern Slides, and Stereoscopic Slides.* Published by Mawson and Swan, 33, Soho Square, London, W.

This little pamphlet contains practical directions for the making of transparencies and lantern slides on the Mawson plates, and useful formulae of pyrogallol, quinol, ferrous oxalate, and eikonogen developers, with instructions for obtaining any desired tones.

*The Gelatino-bromide Paper Process, Contact Printing, and how to Make Enlargements.* Published by Mawson and Swan.

Clear and practical directions, which will enable any worker to turn out good prints, and also to make enlargements or enlarge negatives.

*The Wet Collodion Process for Iron Development.* Published by Mawson and Swan. Price 3d.

Since the introduction of the gelatino-bromide plate, the old wet collodion process has been much neglected, but there are many of our readers who may wish to revive this old process for special work, such as copying, etc., and this little work will give valuable help. The subject is briefly but practically treated, and a chapter devoted to failures, their causes and remedies, is not the least useful and valuable part of the book.

*A Set of Labels, Useful to Photographers.* Published by Mawson and Swan. Price 3d.

A convenient set of plainly printed labels for stock bottles for the dark-room, etc., and if carefully applied, sized, and varnished as suggested lately in our columns, may well replace the carelessly written and frequently illegible home labels of the usual sort.

*Exposure Note Book.* Published by Mawson and Swan. Price 3d.

A small pocket note-book, containing fifty pages, ruled for data of exposures, and some useful developing formulae, and an exposure table.

## Catalogues.

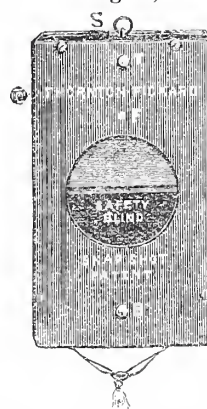
W. B. WHITTINGHAM AND Co., 43 and 45, Charterhouse Square, and 91, Gracechurch Street, E.C. Price 6d.; post free.

A comprehensive and well illustrated book of over 150 pages, containing every description of photographic apparatus, plates, papers, appliances, etc.

MARION AND Co., 22 and 23, Soho Square, London, W.

An amateur's price list, well printed and illustrated, and containing prices and information of the latest novelties brought out by this firm. Amongst them we note Claringbull's patent portable dark-room, a "blow-down" flash-lamp, Kershaw's new shutter, Buttrum's patent pedestal studio stand, and last, but not least, Hurter and Driffield's actinograph. We also note that Messrs. Marion and Co. have adopted the Hurter and Driffield system of denoting the rapidity of the plate.

THORNTON-PICKARD MANUFACTURING Co., St. Mary's Street, Deansgate, Manchester.



This firm have, as is well known, made a special feature of their shutters, and in the catalogue they send us we have every kind figured and described. We specially note the focal-plane shutter, working in front of and close to the sensitive plate, and the safety snap-shot shutter, shown in accompanying figure, which is a blind shutter sufficiently small and compact to be fitted to every form of hand-camera, and is provided with a new safety blind, which automatically covers the lens, whilst pulling the cord to set the shutter, and as soon as this is effected the safety blind immediately flies back and leaves the shutter ready for making the exposure. The Ruby cameras, the cheap and convenient rubber mouldings, etc., of this firm, and figured in the pages of their list, are well known to our readers.

THE ART OF PHOTOGRAPHING MICROSCOPIC OBJECTS. By W. Tylar, High Street, Aston, Birmingham.

In a neat little pamphlet Mr. W. Tylar explains the use of his new photo-micrographic camera, and gives brief directions to enable the microscopist utterly ignorant of photography to utilise this camera without any special instruction.

**Tyneside.**—The usual meeting was held on the 11th inst., the President, Mr. J. F. McKie, in the chair. There was a large attendance of members. A very interesting paper was given by Mr. W. Bell on "Chloride of Silver Emulsion Papers;" he went into the details of the various toning baths. A batch of prints were passed round to illustrate the paper.



## Photographic Procedure.

By E. J. WALL.

Author of the "Dictionary of Photography."

### SECTION IV.

#### THE DARK-ROOM (continued).

**Ventilation of the Dark-Room.**—"Few things are of greater importance than pure air, and the means of obtaining it; few things of equal importance receive so little attention. To no one is the subject of more vital interest than to photographers, working as we do, for many hours at a time, in rooms which are often of very small dimensions—often, in fact, little better than cupboards." Thus writes Mr. C. H. Bothamley, in No. 6 of the *Photographic Quarterly*, in his article "Air and Ventilation." A reference to this article will give all the scientific data about vitiated air and its ill-effects, and I would only add that, given a small cupboard, a smelly smoky paraffin lamp, an ammonia developer, and a good smoker of strong tobacco or a full-flavoured cigar, and the chances are that in a little time a first-rate headache may be developed. Certainly I have worked personally under these conditions, and emerged after two hours' work, limp and aching, and strongly anathematising my dark-hole.

"The simplest and most rapid method of completely renewing the air in a room is to open the door and the windows and allow the air to blow through. This treatment should be adopted as often as possible in the case of small rooms which are used for photographic purposes, if perfect ventilation cannot be secured in some other way. The efficiency of an open fire has already been mentioned, but fires are not admissible in rooms from which all active light must be rigorously excluded. The developing lamp can, however, be made a very useful aid to ventilation, especially when gas is used. A convenient arrangement is shown in section in fig. 112. A metal tube AA, two inches in diameter, is

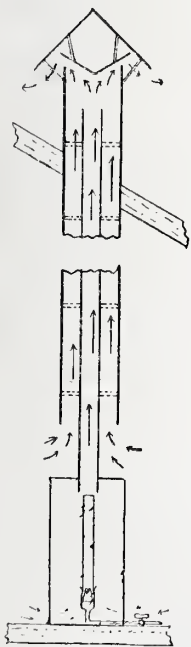


FIG. 112.

"We have not only to secure the removal of foul air, but we must arrange for the entrance of fresh air, without at the same time producing a draught. In order to satisfy the last condition the incoming air must not have a velocity exceeding one foot, or at the most two feet, per second. It

should not enter close to the floor, for then it is liable to bring with it a considerable quantity of dust, and the openings of the inlet get fouled with sweepings. It should come directly from the room from the outside wherever possible, and not from another room or a passage, and the inlet must not be placed near a drain-grate or any other source of impurity.

"One of the simplest and most efficient ways of securing a supply of fresh air (provided that the exit is working properly) is to build into the wall, if this is possible, bricks or gratings with conical perforations (Ellison's Patent Conical Ventilators), the wider end of the cones being on the inside (fig. 113). Under these conditions the air is distributed uniformly; and even with a considerable outside velocity there is no perceptible draught. The Radiator Ventilator of the same inventor has also been found to work satisfactorily under difficult conditions. These can be fixed at low levels, and distribute the air equally in four directions without draught. Either of these would suit a small room, such as is very commonly used for developing purposes.



FIG. 113.

"When a supply of fresh air from the outside cannot be obtained, but the air must be taken from a passage, it is often convenient to make the inlet in the door by cutting out a long white strip of wood, and then fixing on the inside a kind of double box, shown in section in fig. 114. This arrangement allows the air to enter, but excludes light. It may be made of wood, of metal, or even of stout strawboard or millboard.



"It is always desirable that the air should be filtered from the dust which it carries, and this is done by placing over the inlet wire gauze or coarse canvas, which is changed or cleaned from time to time. Dust is not only injurious to the lungs, but may also cause serious damage to plates, paper, etc.

FIG. 114. "Where unfortunate circumstances make it impossible to obtain efficient ventilation, every means should be taken to minimise the evil as far as possible. The developing lamp may with advantage be placed outside the room, the light being admitted through a pane of glass, but the gain is chiefly in the direction of a lower temperature, for the great evil is not the products of combustion, but the volatile organic matter from the lungs and body. If the room has a window, one of the upper panes of glass may be taken out and its place filled with a sheet of perforated zinc, or, better, by two sheets with a space between. Any draught arising from this may be prevented by putting round it a screen of thin wood or strawboard, open at the top. There is another simple and useful device, which is well known, but is not so often put into practice as it might be. A piece of wood (B) about an inch thick, four inches broad, and the exact length of the window-frame, is fixed at the bottom of the sash, so that the latter is always slightly raised; the air will then enter at the middle of



FIG. 115. the sash through the space between the wood and the glass (fig. 115), and, being directed upwards, causes no perceptible draught. When the room has no window, or the window cannot be used for purposes of venti-



FIG. 116.



lation, an inlet should be made in the bottom of the door, and an outlet at the top, as indicated in fig. 116. After the room has been in use the door should be left wide open for some time. If a rapid change of the air is required the door may be moved rapidly backward and forward several times; it will then act in the same manner as the punkahs which are used in tropical countries and will displace large quantities of air.

"In conclusion, it is impossible to insist too strongly upon the absolute necessity of doing everything that is possible to secure proper ventilation. Few poisons are more stealthy in their action, or more certain in their evil results, than foul air constantly or frequently breathed. Few people are more careless—I will even venture to say, more foolhardy—in this respect than photographers, both professional and amateur."

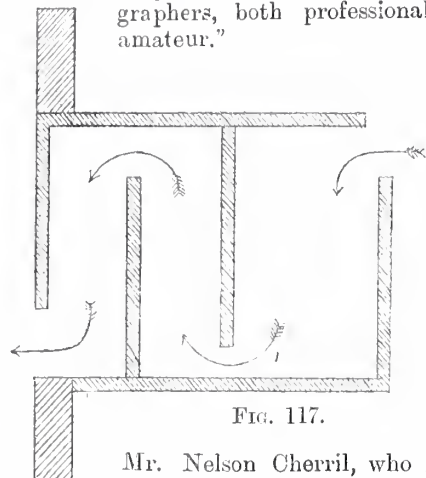


FIG. 117.

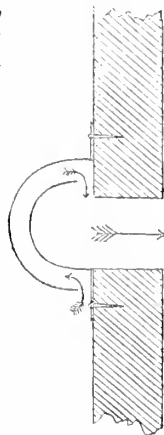


FIG. 118.

Mr. Nelson Cherril, who is well known as a worker of ceramic photography, suggested some time ago a very good ventilator, as shown in fig. 117; and one of these fixed in the top of the window, and another in the bottom of the door, will cause a good draught and circulation of air. Another form is sketched in fig. 118; whilst an ordinary piece of zinc piping bent in two or three elbows, or S shaped, will act efficiently also. I know of only one commercial dark-room ventilator, and that was noticed in these pages a few weeks ago, and is sold by Mr. A. R. Wormald.

(To be continued.)

**Photographic Society of Great Britain—Affiliation Scheme.**  
—Meeting of Delegates, February 15th, Mr. W. Bedford (P.S.G.B.) in the chair. The following duly accredited delegates were present: G. L. Addenbrooke (P.S.G.B.), F. C. Cembrano, jun. (Richmond C.C.), F. W. Cox (N. Middlesex P.S.), C. C. H. D'Aeth (Dorset A.P.S.), C. H. Desch (Finsbury Technical College P.S.), P. Everitt (L. and P.P.A.), E. E. Gardner (Finsbury Technical College P.S.), A. J. Golding (Holborn C.C.), S. Hodsoll (North Kent P.S.), A. Mackie (N. Lond. P.S.), J. W. Marchant (N. Middlesex P.S.), F. W. Pask (L. and P.P.A.), G. W. Ramsay (Richmond C.C.), E. A. Ryman-Hall (Oxford P.S.), L. Warnerke (F.S.G.B.). The rules of the affiliation, as approved by the Council, were adopted on the motion of Mr. Ryman-Hall, seconded by Mr. Cembrano. It was agreed that the Lantern Slide Sub-Committee should put the Indian and Colonial set in circulation, obtain other sets as gifts or loans, and formulate regulations. It was decided to await the report of the Committee appointed by the P.S.G.B. on the methylated spirit question, before taking any steps in the matter. Upon a motion by Mr. Everitt, seconded by Mr. Cembrano, it was decided to ask the Council what funds were at the disposal of the Committee. Upon a motion by Mr. Everitt, seconded by Mr. Mackie, it was agreed that a list of dark-rooms available for the use of members of the affiliated societies should be prepared. It was decided that summonses to meetings should be sent to delegates only; all other communications were to be addressed to the Secretaries of the affiliated societies. It was also decided to form a collection of good and instructive work for circulation, and that steps should be taken to promote the interchange of papers between the Societies forming the affiliation.

## Elementary Photography.

BY JOHN A. HODGES.

### CHAPTER V.

#### HOW TO MAKE A PORTABLE DARK-ROOM OR DEVELOPING CABINET.

A Substitute for the Dark-room—Commercial Developing Cabinets—A Portable Dark-room—How to make a Developing Cabinet—The materials required—The Sink—The Bench or Table—The Shelves—A Rack for Dishes; its Construction—The Grid—Water Supply—The Cistern—The Curtain, how to Fix—Ventilation—Concluding Hints, etc.

I PROPOSE in the present chapter, for the benefit of those who cannot obtain the exclusive use of a room for the purpose of fitting it up as a dark-room on the lines already laid down, to describe a modification of a very useful piece of apparatus which I made for myself some fifteen years ago as a temporary dark-room for developing collodion negatives, which can be easily made by anyone capable of using ordinary

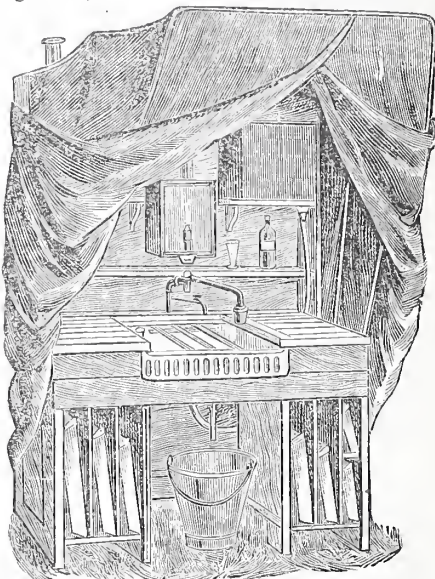


FIG. 17.

tools, or, failing such skill, by any carpenter, from ordinary materials, and at very little cost. Of course, if the reader is prepared to incur the necessary expenditure he need not

put himself to even this trouble, for he may purchase one of the many very complete portable dark-rooms which are now offered for sale by different dealers. Of these, that sold by Messrs. Houghton, and shown in fig. 17, may be taken as a type. They are all very similar in appearance and design, although there may be some slight variations in detail. They consist usually of a table or bench for developing, part of which is occupied by a sink, the space underneath being usually fitted up as a rack for reception of dishes, the upper portion of the back

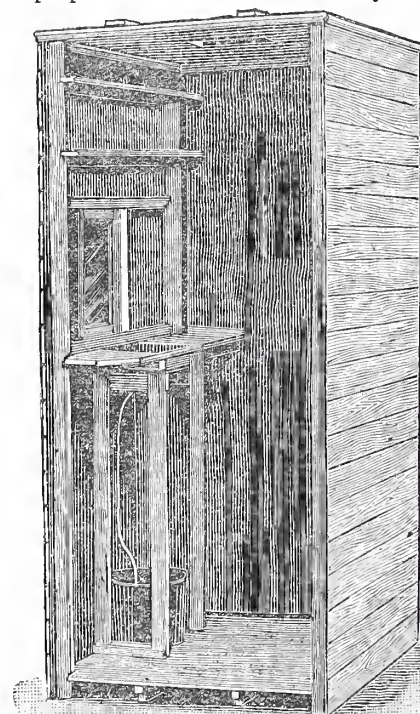


FIG. 18.

being utilised as a support for shelves upon which the



bottles containing the developing solution and other accessory apparatus find a resting-place. A developing cabinet of this description is by no means an unsightly object, nor does it occupy much space; it may therefore be placed in any ordinary apartment, such as a spare bedroom, without seriously disturbing existing arrangements. A still more recent addition to this class of apparatus is the extremely convenient portable dark-room of Messrs. Davenport, a drawing of which is shown in fig. 18. These are strongly but lightly made of wood, and only require screwing together. They are very completely fitted with all necessary fittings, including sink, bench, waste pipe, etc., ample provision being made for ventilation. When placed in the corner of an ordinary apartment, the "Ever-ready" dark-room, as it is called, might easily be mistaken for an ordinary linen press or cabinet. I certainly think, if the reader is unable to secure the exclusive use of a room, that the possession of either one of the contrivances which have been described, or of a home-made substitute built upon similar lines, may be regarded as essential to successful working. Not only will it allow the reader to work in comparative comfort, but, by preventing the slopping and dropping of the various solutions, and the consequent destruction of furniture and carpets, it will save him from incurring the perhaps not unjust wrath of the "powers that be."

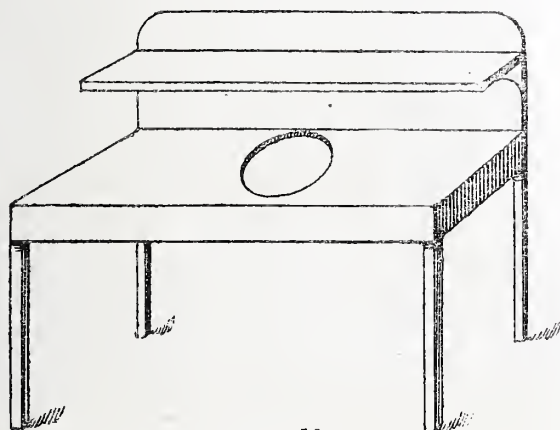


FIG. 19.

I will now, for the benefit of those who may prefer to construct their own apparatus, give a brief description of the home-made contrivance to which I have already referred. At the time when I made it, now some sixteen years ago, I contrived to do all my dark-room work within it, though the process I was then employing, namely, wet collodion, was a far more difficult one to work successfully under such conditions than that with which we are now dealing. I merely mention the fact in order to convince the reader of its practical utility and suitability for the purpose for which it is intended.

As a basis for our operations we must procure from a dealer in second-hand furniture a common deal washstand of the pattern shown in fig. 19. Such an article should not cost more than 3s. or 4s. Its condition is immaterial so long as the woodwork remains sound. The ravages of soap and water we may easily hide with a little paint.

The first thing to be done is to convert the round hole in the middle, into which the wash-hand basin fits, into a square one, which may be easily accomplished by the aid of a keyhole saw. We will suppose the size of the opening to be 15 in. square, and we have now to construct the sink, but unless the reader happens to be *au fait* in the use of a soldering iron, it will be necessary to invoke the aid of a plumber, for we require a zinc tray 15 in. square by 4 in.

deep, in the centre of which a short piece of three-quarter pipe should be soldered. This tray may then be fitted into the opening and secured by means of sharp tacks. We now proceed to widen the top of the washstand, so as to give a little more table room on which to work. To do so we screw two fillets of wood at each end, as shown at AA, in fig. 20, which represents the top of the washstand, letting them project about 8 in. A piece of board (EE, fig. 20) 8 in.

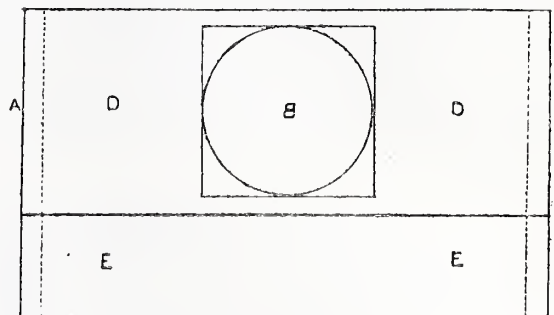


FIG. 20.

wide and the exact width of the washstand, is then to be screwed to the projecting fillets, which will afford it the necessary support. This will form the developing table proper. Now obtain some strips of wood about 2½ in. wide by 1 in. thick. Cut off two four-foot lengths and screw them firmly to the back, as shown at AA in fig. 21. In most washstands of the kind to which I am referring, a shelf will be found running along the back. This may be

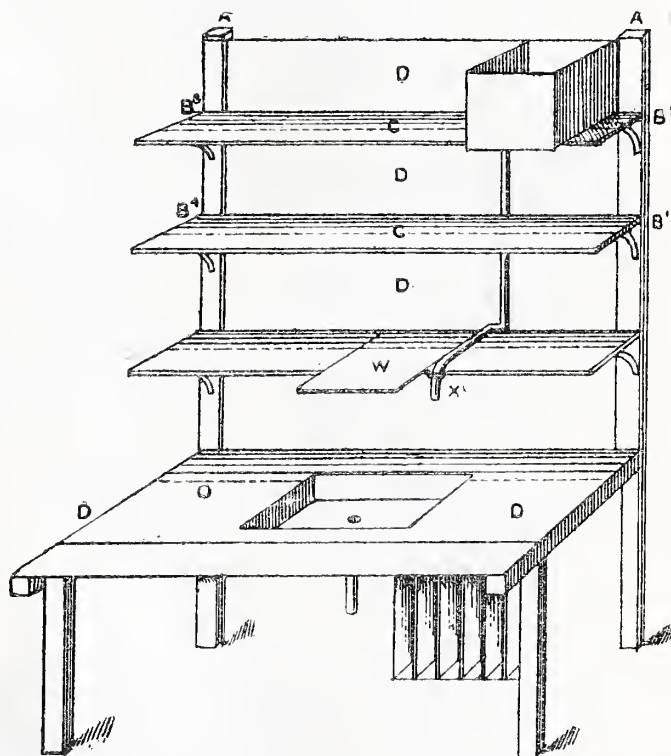


FIG. 21.

left *in situ*; but about 10 in. above it, two angle brackets should be attached to the uprights and two more above, as shown at B¹ B² B³ B⁴, in fig. 21, and to these should be screwed two shelves CC. In the centre of the lowest shelf a piece of board 11 in. square, marked W, should be screwed in order to form a broad base upon which to rest the lamp. The back, D, D, D may then be filled in by screwing some thin boards, such as those used by picture-frame makers, to



the two uprights AA. We now require a rack for our dishes and trays. Obtain two pieces of board 11 in. broad and 18 in. long, and mark them out on both sides with parallel lines, three inches apart, as shown in fig. 22. Cut out as many 14 in. lengths from the 11 in. boarding as there are parallel lines, and then nail together at top and bottom with 1 in. fine brads, as shown. When the two end pieces, B<sup>1</sup>B<sup>2</sup>, are nailed on, the rack will be complete. The most convenient place for it will be under the bench to the left of the sink, and it can be fixed in position by screwing with some long screws through the top of bench.

The next thing to which we can turn our attention is a grid for the sink. To make it, take two pieces of wood 10 in. long by 3 in. wide and 1 in. thick, and a few laths,

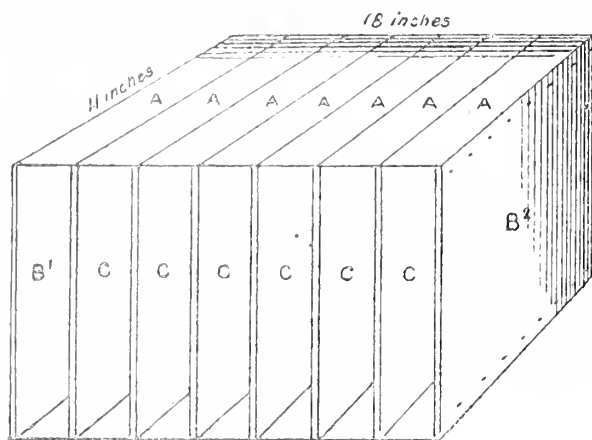


Fig. 22.

like those used for window blinds, 14½ in. long; nail these together about an inch apart, as shown in fig. 23, when the grid will be complete.

We must now make some provision for a supply of water for developing. We may, of course, make shift with a jug and a pail, but a far better plan will be to procure from the nearest grocer one of the tins in which glycerine is stored. These are about twice the size of an ordinary biscuit box, but watertight, and made of much stouter tin; they hold about two gallons of water. This should be placed on the right-hand side of the top shelf, and a piece of ordinary "compo" gas-pipe should be soldered to the

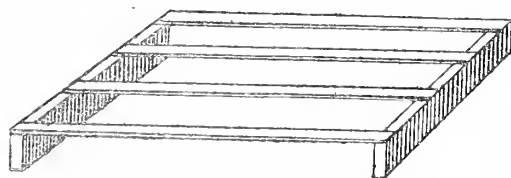


Fig. 23.

bottom, conducted down the upright and carried to the point "X" just above the sink, where a small tap should be soldered. While this supply will, of course, be of no use for plate washing and other purposes where large quantities of water are required, yet it will be quite sufficient for the ordinary purposes of development, for supplying water for mixing the developer, for rinsing the plates after development, and for the cleansing of measures, dishes, etc. In order to carry off the waste from the sink a piece of flexible india-rubber tube should be attached to the short length of pipe which, it will be remembered, we had soldered to the bottom of our zinc tray, and thence conducted into a pail or other suitable receptacle. If the capacity of the vessel be equal to that of the water tank, and we make it a

rule never to fill the one without emptying the other, an overflow will be rendered impossible. Two coats of Aspinall's enamel over the whole will complete our labours; that is to say, if we only wish to work at night, or can completely exclude daylight from the room by means of heavy curtains or a screen constructed according to the method described in the last chapter. If, however, it should not be possible so to arrange matters the apparatus can, with very little further trouble, be so modified as to form in itself a portable dark-room.

To make the necessary alterations, screw firmly two additional uprights, at D D, in fig. 21; and then fill in the sides with thin boarding in the same manner as the back was filled in, in C C C (fig. 21). When the sides have been so filled in the roof may be covered in the same way. The next thing to do will be to make all the woodwork thoroughly lightproof, and the best way of doing so is to paste the outside over with one thickness of stout carpet paper, covering that, in turn, with one thickness of stout Willesden waterproof paper; the inside should also be lined with the latter, as it may then be washed with impunity when it becomes dirty or stained with chemicals. We have now to arrange about keeping out the light from the back, and to effect this a curtain must be provided. It should be made of one thickness of black, and one of orange twill; and sufficient material must be purchased to make, when sewn together, a curtain at least one and a half times as wide as the front of the bench, and its length should be such that it just touches the floor. It must be nailed with tin-tacks to the top and sides of the cabinet. The extreme ends should first be tacked to the top of the uprights, and then the "slack," as it were, got rid of by folding in pleats and tacking each pleat. The tacking should be continued down the sides to just below the table. In order to facilitate the operator's movements in getting in and out, the curtain should be cut up the middle of the back for about three feet of its length from the ground. When the person using the cabinet wishes to change or develop a plate, he lifts the curtain, seats himself on a chair, gathers the loose ends of the curtain round him so as to exclude all light; and in order to assist him in doing so, a few buttons and loops of elastic should be sewn on the curtain inside, which will prevent it from suddenly slipping and admitting an unexpected ray of light. The exact position for these cannot be indicated, but there will be no difficulty in finding the most suitable places.

Some provision for ventilation should now be made, for without it the air in the interior of the cabinet would soon be as foul as the notorious "Black-hole" of Calcutta. Cut, with the key-hole saw, a hole, three inches in diameter, in the roof, to which affix an elbow-joint length of stove pipe. This will carry off the heated and vitiated air from the top of the tent. But it will also be necessary to provide a means for pure air to enter and take the place of that which goes out. A sufficient quantity might filter through the curtain, but it will be well not to depend upon that source of supply. At the back of the table or bench, therefore, another hole, three inches in diameter, should be cut, and a second elbow-joint affixed in the same manner as before. Care should be taken to turn the mouth of this so that it points in a direction opposite to that in which the window of the room is situated.

If the foregoing directions have been carefully carried out, the reader should be in possession of a developing cabinet, which, although it will have cost him but a few shillings to construct, will, for all practical purposes, be as convenient and useful as a commercially-made article costing as many pounds.

(To be continued.)



## The "Open, Sesame," of Successful Photography.\*

By H. MACLEAN, F.G.S.,

*President, Croydon Camera Club, Member of Surrey Art Circle, etc.*

THE multitude who labour in that large field of work which our club represents may be roughly separated into two broad divisions. On the one hand are those who, being scientific students, give their attention to the numerous chemical, optical, or mechanical foundations on which the art-science depends for its expansion. On the other hand are the practical exponents of the powers placed at their disposal by the men of science aforesaid.

These exponents, then, use technicality simply as a means to obtain an end. I want you to consider for a moment what is that end.

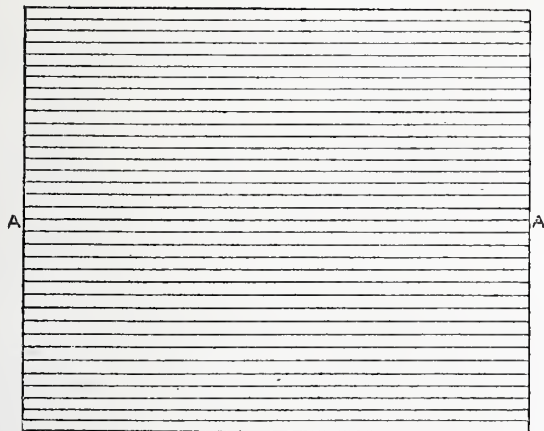


FIG. 1.

Without going through a long list of the varied applications of photography, it may, I think, be conceded that most amateurs, certainly nearly everyone I am addressing, either aim at the making of portraits, groups, or landscapes. Although my remarks may to a large extent be applied to the taking of portraits, and also of groups, they are primarily addressed to the amateur who strives to render sky, earth, and water.

In all things the first step is the most critical, and with photography the first step, by which I mean the exposure, is not only critical but is, so to speak, almost the whole journey; not

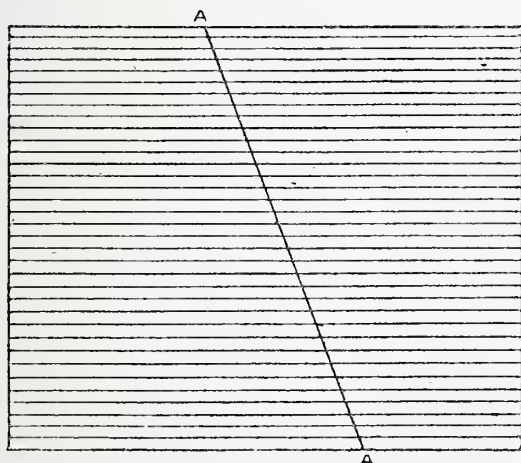


FIG. 2.

entirely so, however, and the remainder of the journey, although it is only a small fraction of the whole, is a very troublesome and critical one, as all of us who grope our way along in the dark-room know full well.

Admitting the importance of the first step, that is the exposure, what is it that goes to make a good exposure? In

my opinion such is the product of a fortunate concurrence of favourable opportunity and cultured ability.

What kind of ability? you may ask. That which is able to readily recognise what scene will, with the amateur's limited means, produce a praiseworthy picture.

Now, this ability is by no means innate, but it has to be acquired, which is only to be done by suitably training the necessary faculties. Undoubtedly, the most valuable training is that of experience, but it is worth your while to consider if it be not advisable to supplement the above, for by doing so you avail yourselves of the accumulated experiences of many others. It has been well said that "we may be more clever than *any* one but not than *every* one."

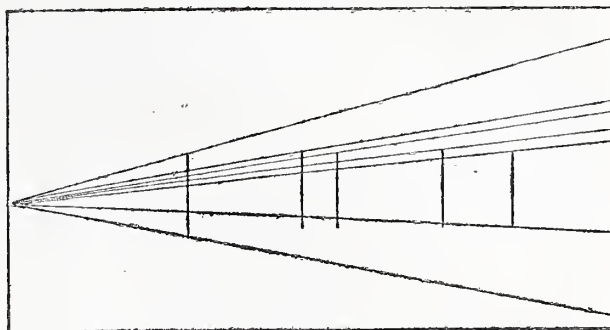


FIG. 3.

In case that some among you should hesitate about spending time on the study of abstract art, it is my intention to put before you certain reasons which I hope may induce you to give the subject some thought.

The first thing which I advise the novice in art matters to do is to obtain a knowledge of the fundamental rules of what is known as "Composition." So valuable do I think this knowledge that I last year approached an eminent artist and requested him to read a paper to you on the subject. But his answer was that "he could give no rules" for your guidance; that he painted his own pictures without conscious reference to any such, and, finally, that many great works are produced in opposition to so-called rules of composition." This last is not my opinion. But let it be well understood, rules alone

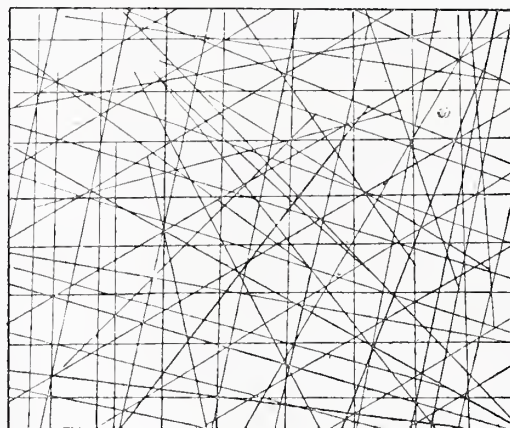


FIG. 4.

never made nor ever will make a great artist, although they are none the less necessary, as a moment's consideration will prove. For instance, one could not engage in first-class whist without mastering the regulations under which the game is played, though we know that doing so does not of necessity ensure the making of a brilliant player.

I do not purpose dwelling upon the numerous maxims which should guide us in picture taking; they are too many, and, besides, I should be puzzled to select those particular ones that meet with the universal assent of painters; from this you may gather, that it is very hard, perhaps impossible, to apply all of them to any one photograph, or indeed, for the matter of that, to any one painting; for apart from their number they are some of them antagonistic to each other. Those who are for the first

\* Read at Croydon Camera Club on December 7th, 1891.



time trying to make use of them must not expect to be able to at once apply them with full effect. All information has to be digested and used without premeditation to yield its best result; thus in swimming the necessary movements are never performed with perfection until they have become a kind of second nature, and we know full well that this is not without much striving. In order to emphasise the value of these rules, or of some of them, I will take one or two as samples of the kind of use they are.

Let us first consider "the direction of lines with regard to contrast." In fig. 1 are a number of straight horizontal lines; one of these, A A, I wish to draw your attention to; but it is very difficult for you to notice it, and were the letters not at each end of it you could not subsequently identify it. Yet by altering its direction not only does it become immediately noticeable, but you would without any trouble remember which is the line in question (see fig. 2). By this simple expedient of drawing the line A A across the other lines, I want you to deduce that the power at our disposal by making a judicious use of lines is a very important one.

Starting from this I might spend the rest of the evening in illustrating the property which lines have to modify each other by the force of contrast, and although, if I did so, you might not in all cases at once appreciate the full effect of this potency, I ask you to believe with me that the more abstruse interactions of lines have quite as firm a foundation as have the simpler ones brought under your notice to-night.

Perhaps the curious illusion produced by the arrangement of

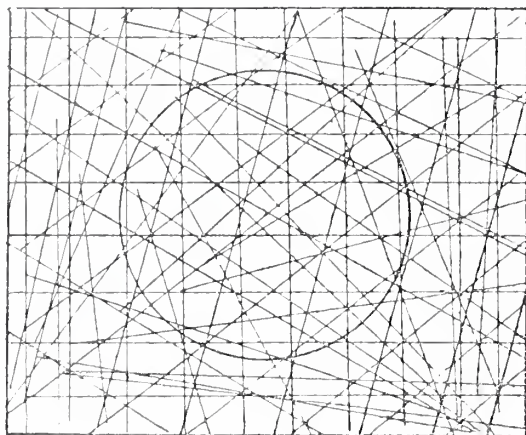


FIG. 5.

lines in fig. 3 will interest you. The five perpendiculars, although measuring the same, appear to the eye to be of different lengths.

In figs. 4 and 5 is shown the contrasting power of curved lines in juxtaposition to straight ones. Fig. 4 is covered with straight lines, and if another were added its addition would not be noticeable, but if to such an arrangement we add a curved line the latter will immediately make its mark. It is this quality of curves and straight lines to enhance each other that oftentimes gives us such pleasure in pictures of bridges and the like.

From a consideration of the foregoing examples, which are but a minute fragment of the various effects which lines exercise in modifying each other's expression, you may judge that an attentive study of this one branch of composition is well worth your while.

Not less important is the full appreciation of the uses of light and shade. Although photographs depend entirely on the skillful employment of monochrome, a picturesque, dramatic, and frugal arrangement of shadows is not often aimed at by the average amateur; but we too frequently find in the finished work that there is quite a disdainful disregard of this dominant factor in the production of attractive prints. As in the case of lines I do not propose to give you any detailed information on the artistic, and therefore pictorially remunerative uses of chiaroscuro, but I shall content myself, on this present occasion, by demonstrating to you that there is something more in light (and therefore in shadow) than the mere illumination of the objects which go to make a scene.

(To be continued.)

## Societies' Meetings.

**Brechin.**—The usual monthly meeting was held in the rooms St. Mary Street, on Wednesday evening, 17th inst. In the absence of the President, Mr. Maclean Murray was called to the chair. Mr. J. D. Ross, the Secretary, read a paper on "Shutters," which was very favourably criticised. In the course of the paper, a large number of shutters were described and about a dozen specimens shown, including snapshot shutter with safety blind, and time and instantaneous shutter with speed indicator, kindly sent down for exhibition by the Thornton-Pickard Manufacturing Company. These shutters were favourably commented on by the members, the safety blind being a particularly useful adjunct, especially in "Magazine" cameras. Specimens of the new Eastman rapid bromide paper were shown, and some samples distributed.

**Bristol, Univ. Coll.**—On the 16th inst. a most interesting paper was given by Mr. G. J. Grey on "Photographic Illusions," Dr. Richardson in the chair. Mr. Grey first described distortion and 'passed, round several prints to illustrate. He then went on to the method of taking double photographs, and several prints showing the same person in two positions on the same print were handed round, and also a photo of a man with his head in his hand. He also described the method of doing this by reflection. In conclusion Mr. Grey mentioned the method of ghost photography, of which several specimens were shown.

**Brixton and Clapham.**—An ordinary meeting was held on the 18th inst., Dr. J. Reynolds in the chair. Mr. H. Crouch, who had been announced to deliver a lecture on "Lenses," had telegraphed at the last moment to say that by his doctor's orders he was confined to his house, and regretted that he was unable to keep his engagement. Several matters of business were brought forward, and finally an impromptu question box was made of the chairman's hat, and various remarks and difficulties which had occurred to members were discussed, thus making interesting and instructive a meeting which might have otherwise proved rather dull.

**Camera Club.**—On Thursday, February 18th, Mr. S. B. Webber read a paper upon "Orthochromatic Photography." Captain Abney occupied the chair. The lecturer gave an account of some experiments in photographing certain subjects, including stained-glass windows and old documents, and described his method of preparing and treating the plates in orthochromatic work. A number of slides of the different subjects was shown and described illustrative of the lecture.

**Chiswick.**—A committee meeting was held on the 22nd inst., Mr. R. W. Watson in the chair. The subject of "Platinum and Bromide Printing" was fully discussed by the members of the club present.

**Croydon.**—On the 15th inst., the President, Mr. H. Maclean, F.G.S., in the chair, Mr. J. Weir-Brown read a communication entitled "Warm Tones on Bromide Paper." The lecturer with considerable minuteness entered into the history of his discovery of the availability of uranium for the purpose of toning bromide paper, and also explained in detail the procedure which he now considers best to adopt. From the description of the *modus operandi* it would appear that the changing of the ordinary cold tones is not only a satisfactory alteration, but is also an easy one to effect. Prints in various sepia-like shades and in red chalk colour were shown in illustration, and a method of obtaining green tones suitable for sea pieces indicated. Finally a demonstration was given which served to indicate the facility and certainty of the operation. In answer to questions, Mr. Weir-Brown stated that he was of opinion that prints treated by his process were not affected by the ordinary dampness usual to our climate, and little or no change had been noticed in prints exposed to sunlight. In order to overcome the difficulty of rapidly drying which prevents the extension of the process to lantern slides, the President suggested the employment of spirits of wine, which Mr. Peckham also advocated. The lecturer (Mr. Brown), speaking on behalf of the photographic section of the Croydon Microscopic Club, said the executive of the said section would be at all times pleased to welcome any members of the Croydon Camera Club who would like to attend their meetings, which friendly invitation was cordially appreciated. Mr. A. Smith was elected a member. The next meeting will be on February 29th, when the application of the Welsbach incandescent gaslight to the optical lantern will be explained and the invention will be used to exhibit members' slides. The annual dinner of members and friends will be held at the Greyhound Hotel on March 17th, tickets, price 4s. each, should be at once applied for. Morning dress will be worn. The voting to decide upon the winner of the prize offered by the President for the best print by a novice from negative taken at a club excursion during 1891 resulted in the award going to Mr. Holland.

**Devonport.**—There was a large attendance at the last meeting of Devonport Camera Club, the chief interest being taken in the competition, adjudicated upon by Mr. J. D. Pode, Mr. J. Boulds, and Mr. Penson. Members had been invited to send in six prints and six



transparencies, and the competition had been popular. The judges had had considerable difficulty in making their awards so even was the work, and much of it was above the average. In the print competition Mr. A. G. Hoyten took first place and Mr. C. H. Moore second. For transparencies Mr. Hoyten again headed the competitors, and Messrs. J. F. Coombes and Lethbridge were bracketed second. Transparencies were lantern slides in each case, and the whole of those sent in for the competition were passed through the lantern. Mr. Charles J. Harris afterwards read a paper on "Lenses," showing considerable care in putting the matter before the beginners in the art. While not so deeply scientific as to be tedious, it touched that side of the question in such a way as to show upon what principles a choice of lenses should be made. Mr. Harris thought it false economy to get an inferior lens, but it is certain that with too many operators the study of the use of lenses is a matter in which they have little interest, and about which they do not strive to attain deeper knowledge. Time prevented the discussion of the paper, which was thoughtful and exceedingly interesting.

**Durham City.**—The first meeting of this newly-formed club was held on the 18th inst., Councillor E. White in the chair. The rules submitted were adopted, and the following officers were elected for the year:—President, Rev. H. E. Fox, M.A.; Vice-Presidents, Dr. Barron and Councillor E. White; Hon. Treasurer, Councillor W. Gray; Auditor, Mr. A. Appleton; Council, Messrs. Bate, Morgan, Wise, and Whitfield; Hon. Secretary, Mr. Robert Hauxwell, The Avenue, Durham. The Secretary announced that thirty members had now joined, which was considered very satisfactory. A lantern exhibition was then given, the slides being kindly lent for this occasion by Mr. Edgar G. Lee, Honorary Secretary, Newcastle and Northern Counties Photographic Association. The slides were greatly admired.

**East Southsea.**—By the courtesy of the proprietors of the AMATEUR PHOTOGRAPHER this society have been enabled to exhibit the Prize Lantern Slides of 1891, at the Clarence Hotel, Southsea. The lime-light lantern was manipulated by Mr. G. Knight, of Middle Street, and the majority of the pictures, especially the figure studies and statuary, were greatly admired. After the exhibition an enjoyable smoking concert was held under the presidency of Mr. Boyle. Songs were sung by Messrs. Leigh, Parker, Tuck, Lewis, Barnes, and Horton, recitations given by Messrs. Cleminson, Kell, and Williams, and violin solos played by Mr. Winslade. Mr. Burn ably presided at the piano.

**Exeter.**—At a general meeting on the 16th inst., the President, Dr. Cheese, in the chair, the Hon. Secretary, the Rev. John Sparshatt, read letters from the Right Rev. the Lord Bishop of Exeter, Lord Poltimore, and Lord Iddesleigh, kindly granting permission to the society to photograph in their grounds during the coming season. The President then delivered his inaugural address for the year 1892. He commenced by thanking the members for having a third time elected him as their President. This being the first occasion on which the society had met since the lamentable death of the Duke of Clarence, he desired to place on record the expression of the society's sincere sympathy with all the members of the Royal Family in their sad bereavement. Referring to the recent "At Home" held by the society he ventured to think that though there had been considerable hesitation in undertaking such an important work as an exhibition of the members' photographs, unaided by any outsiders, yet the result had been far more successful than the most sanguine of them had dared to hope. But while the average standard of the exhibits had produced very satisfactory commendations from the visitors and from the Press, he would ask the pertinent question "Do our productions satisfy ourselves?" He thought that the criticisms passed by Mr. Welford upon the prints sent in for competition during the past year would apply generally to the exhibits at the College Hall. This was to the effect that though many of the prints reached a high standard of excellence as photographs they were merely faithful reproductions of the scene in front of the camera and nothing more. In very few instances were there any proofs of an attempt by composition and judicious arrangement of form, light, and shade, to make a picture which should be worthy of the name, and so have a claim to be considered a work of art. This, he considered, should give them the keynote of their efforts during the coming season. They must put more poetry, more soul into their production. There was much more room for the æsthetic side of photography among all members. By "æsthetic" he did not mean the ridiculous side of the term, which prompted an idiot to go mooning absurdities over a sunflower and all that kind of thing. The sober usage of the term implied simply the cultivation of the beautiful, and, as applied to photography, the showing forth the poetic side of nature. Their late exhibition had shown that the members could produce quantity; let their next emphatically denote an equal advance of quality. Doubtless they were largely handicapped by the great drawback of the inability of the camera to produce colour. Here their art must step in, and by a judicious choice of

light and position so arrange the details of the scene that the resulting picture should be made to reflect the mind of the artist and speak to the beholder. Probably the striving after this result would cause a diminution in the number of photographs, but this would be more than compensated for by the increased quality of the work. Circumscribed as amateurs were in the practice of their art it was tolerably certain that it must be chiefly in rural scenes they would have to search for subjects such as he referred to, and with such lovely scenery as Devonshire could boast of there should be no difficulty in finding endless opportunities for picture making. As it would much help to a definite ideal if members were to choose some special theme or subject to try and illustrate he would, with their permission, offer two prizes during the coming season for the best sets of prints illustrating Tennyson's "Dora." It was an easy subject, all the elements of which might be easily found in their neighbourhood. While this work would engross the energies of their (photographically) old members, they must not forget the novices, those who were just beginning, or desirous of beginning their delightful art. Arrangements would therefore be made whereby the necessary instruction would be given to all who needed it, and he hoped this step would be the means of securing the membership of a number of aspirants. The uses of photography were almost illimitable, and it had been pressed into the services of every art and science, so that there were very few to whom the pursuit would not be useful and instructive, as well as elevating. In conclusion, he appealed to the members to take up one branch of the subject and let the society have the benefit of their efforts in the shape of papers to be read at their monthly gatherings.

**Faversham.**—The monthly meeting was held on Tuesday, at 50, Newton Road (by kind permission of Mr. Cremer), when a very interesting and instructive demonstration was given by Dr. Evers illustrating the working of the Ilford "Alpha paper." Experiments were made with two developers upon paper that received various exposures, which gave brilliant results, with pleasing gradations of tone.

**Great Yarmouth.**—On Friday, the 19th inst., a series of prize slides were exhibited and gave much satisfaction to the members. Mr. Price also passed some first-rate slides he had made of Caister Castle. The Secretary also exhibited some slides illustrative of scenery on the Norfolk Broads. The Secretary gave notice that he would read a paper on "Hand-Cameras" at the Town Hall, Great Yarmouth, on Tuesday, 1st of March, and it was arranged that each member should have complimentary tickets to give away. Several well-known local amateurs had promised to assist with songs and music during the evening.

**High School of Glasgow.**—A meeting was held on the 9th inst., Mr. Muir, the President of the Society, in the chair. A paper was read by Mr. Laird, the Vice-President, on "Photographic Plates," which was greatly appreciated. Mr. Laird first described and gave practical hints on the making of the various emulsions for the plates, and then gave a description of the manner in which plates are manufactured on a large scale.

**Holborn.**—On February 19th, Mr. T. O. Dear (Vice-President) in the chair, samples of Eastman's extra rapid bromide paper were distributed amongst the members. A representative of the Incandescent Gas Light Company, Limited, demonstrated on the use of this form of gas lighting as applied to the optical lantern. For this special adaptation of the light, what was termed as oil-gas, was used. Oil-gas was made by pumping air through benzoline oil. The apparatus used was very portable and very easy to carry when travelling about the country giving lectures. It would recommend itself to all users of oil lamps in lanterns. The representative attached the apparatus to a lantern and projected a few slides on the screen. The light seemed very powerful, and was, without doubt, a long way ahead of the oil lamp for the lantern.

**King's Lynn Y.M.C.A.**—On 16th inst. a lecture on hand-cameras was given in the club room, by the Rev. G. Wigglesworth, Vice-President of the club. The lecturer ably dealt with his subject and strongly recommended hand-camera work to the members, dwelling specially upon the construction and capabilities of the following:—the "Key," "Facile," "Radial" and "Chadwick," which by the kindness of the makers had been sent for exhibition.

**Leigh.**—The fortnightly meeting was held on the 18th inst. There was a good attendance. The President, Mr. J. H. Stephen, gave a paper on "Lenses," which was interesting and instructive. Mr. James Crouchley was elected a member. The society is progressing favourably, the membership increasing every meeting.

**Lewisham.**—On the 19th inst., Mr. H. Davis in the chair, Professor Carlton J. Lambert, M.A., gave a lecture on "Light Measurement." He showed the method of ascertaining the candle power of various illuminants, by the aid of photometers, he also explained the difference between the visual, actinic and heating effects in the spectrum. He gave tables shewing how rapidly the actinic value of sunlight falls off as its altitude decreases; the actinic values of sunlight, electric magnesium and limelight; the efficiency and cost of lighting



by ordinary gas burners, Argand, Wenham, albo-carbon, Welsbach (with new special mantle), petroleum, and electricity. Unfortunately, just before the meeting commenced there was a heavy fall of snow, so that there was not such a large number of members as is usual when Professor Lambert gives a lecture.

**Leytonstone.**—On the 17th inst., Dr. Pickett Turner in the chair, Mr. H. Thiele, of the London Stereoscopic Company, delivered a most interesting and instructive lecture entitled "Some Practical Hints in Posing for Portraiture." He illustrated his remarks with a large number of photographs and also by posing himself in many instances. He said the greatest difficulty they had to overcome was the limitation of the lens, which gave an exaggerated perspective, therefore all parts of the sitter should as nearly as possible be in the same plane. Care must, however, be taken not to pose the sitter stiffly, and so give him a lifeless appearance. The proper position for the lens so as to secure equal value for each portion of the portrait was, in the case of busts, level with the nose, in three-quarter lengths level with the chest. All straight lines should as far as possible be broken up by careful posing, or the introduction of accessory, and the picture must at the same time be evenly balanced. Mr. Thiele stated, and produced a photograph to prove, that the two sides of the face often have totally different aspects, one side smiling and the other solemn. The operator should detect this, and pose such a person so as to make the pleasant side the more prominent. In order to induce a natural expression, he suggested that sitters should be asked to imagine they were looking at and conversing with a friend. This would always be found effective, sometimes to a marked degree. Many other useful "tips" were included in Mr. Thiele's discourse, which was listened to with evident appreciation by an audience somewhat meagre on account of the inclement weather.

**Liverpool Camera Club.**—The first annual meeting of the above was held on the 10th inst., the President (Dr. Webb) in the chair. The Secretary and Treasurer's reports for the year having been read, the President congratulated the members upon a successful year's work, and hoped the Club would go on increasing in popularity and membership. The medals, etc., were then delivered to the winners of the Club and special prizes at the Exhibition held on the 20th of January last. The best thanks of the Club were tendered to Messrs. Tomkinson and F. Anyon, who so kindly officiated as judges at the late competition. The election of officers for the ensuing year was then proceeded with. The following gentlemen being elected, viz.:—President: Dr. Cecil F. Webb; Vice-Presidents: Jas. Hawkins and Jas. Smith, jun.; Hon. Secretary and Treasurer: Wm. Tansley, 14, Wentworth Street; Assistant Secretary: A. Dobson; Council: W. A. Stuart, W. A. Brown, C. H. Freeman, W. Haywood, T. Edwards, A. C. Yule, R. C. Robbins, J. H. Jones, and H. Handley; Excursion Committee: Jas. Smith, W. H. Glassey, H. Handley, C. H. Freeman, J. H. Jones; and Hon. Secretary, A. C. Yule. It was resolved that in future ladies be admitted as members.

**Midland Camera Club.**—General meeting, February 19th, the President (Dr. Hall Edwards), in the chair. Mr. Belcher showed the "Cytox" electric dark room lamp, a new introduction of Philip Harris and Co., worked by five cells; Frederiek Iles, a method of his own of etching lantern slides; Prof. Allen, two platinum prints to illustrate sharp *versus* fuzzy prints. The Eastman Company had sent sample packets of their new rapid bromide paper, which were duly distributed amongst those members who would guarantee to produce prints at the next meeting, and relate their experiences and opinions. The meeting then adjourned to the Examination Hall, where a good muster of ladies and gentlemen, friends of the members, were waiting for the lecture by the President on "Photography as an Art." Owing to the inclemency of the weather, however, the attendance was not quite up to expectation. In the course of an able lecture, the President showed slides by the following members:—Mrs. Welford, Roland White, S. G. Mason, and W. D. Welford; also by Mr. and Mrs. Francis Clarke, J. P. Gibson, Edgar G. Lee, Harold Baker, and G. W. Wilson and Co. The slides receiving most appreciation at the hands of the audience were decidedly those of Mrs. Clarke and Edgar G. Lee. A number of freaks and distortions were shown, as "what not to do." The lantern was worked by the Hon. Secretary (W. D. Welford), using his own pattern, with the ether saturator, assisted by W. J. Spurrier.

**Newcastle.**—A meeting was held on the 16th inst. Mr. J. P. Gibson, Vice-President, was in the chair, and the attendance of members was considerably in excess of the accommodation. The Hon. Treasurer (Mr. J. W. Robson) presented the financial statement for 1891, which showed that the receipts had been £53 2s. 9d., and the expenditure £49 4s., leaving a balance in hand of £3 18s. 9d., as against a balance in the previous year of £5 13s. 9d. The Secretary (Mr. Edgar G. Lee) read the report of the council for 1891. The council congratulated the members upon the continued prosperity of the Association, the membership having increased from 115 to 140 during the year. There had been a greatly increased attendance at the meetings, so much so that on several occasions the room had

been found inadequate to properly seat the members. Outdoor meetings had been held at Bellingham, Fountains Abbey, Rothbury, and Barnard Castle, and had been unusually well attended. In the competition promoted by the Association, the class devoted to lantern slides was of very high quality; but the class for prints, confined to amateur members of the Association, both in number and in quality was much below what ought to be expected from a Society like theirs. The report was adopted. Mr. Brown read the report of the sub-committee appointed at the previous meeting to inquire into the practicability of acquiring a permanent home for the Association. The sub-committee visited various premises, and came to the conclusion that no rooms were available at a less rental than £25 per annum, and such rooms would be too small for practical purposes, and would require very considerable alterations to fit them for use. While pursuing their investigations the sub-committee learned that Mr. Barkas, who was a member of the Association, had a proposal to make, and the sub-committee waited upon him at the Art Gallery. Mr. Barkas explained that he was about to make extensive alterations, and promised to provide a room for meetings, fortnightly or weekly, if desired, such room to be 50 ft. by 20 ft., by 30 ft. high, on the second floor, with entrances from the Art Gallery and from the street, properly furnished, with lavatory, etc., with permission to hang pictures and to fit up fixtures for the library and other property of the Association. He also undertook to provide two dark-rooms in the cellar, to be used by members of the Association during the time the Art Gallery was open, from 9 a.m. till 10 p.m. The Association would also have the privilege of the free use of the large lecture hall for lantern shows, and members would be allowed to introduce two friends, Mr. Barkas to admit the public at such charge as he might deem advisable. The gallery, or a portion thereof, might be used for exhibitions, members to be admitted free, but not to be allowed to bring friends. The minimum annual subscription would be 13s., of which the Association would pay to Mr. Barkas 10s. for every member who was not a member of the Art Gallery, and the remaining 3s. would be retained by the Association for working expenses. The Association allowed members of the Art Gallery the privilege of becoming members of the Photographic Association on payment of an annual subscription of 3s. It was decided that a special meeting of the members should be held to consider the scheme. Mr. T. O. Mawson read a paper on "Platinum Toning on Matt-surface Paper," and a discussion followed.

**North London.**—On the 16th inst., Mr. J. Trail Taylor in the chair, Mr. A. Mackie reported that under the rules governing the affiliation scheme of the Photographic Society of Great Britain, the society was entitled to send two delegates to the Committee, and Mr. E. W. Parfitt was accordingly elected to act as second delegate. Mr. J. Weir-Brown then read an exhaustive paper on "Uranium Toning of Bromide Prints," dealing very fully with the discussions which had taken place since he introduced the process, and the various modifications which had been recommended. In the result he was disposed at present to prefer the process as he originally recommended it, although some of the alterations suggested would possibly be of assistance when more fully tested by experiment. The paper was followed by a demonstration, in which a number of bromide prints were toned under varying conditions. Bromide prints were shown by various members.

**North Middlessex.**—February 22nd, Mr. J. W. Marchant (President) in the chair. Mr. T. Smithies Taylor, of Messrs. Taylor, Taylor, and Hobson, delivered a lecture on the "Use and Design of Photographic Lenses," fifty-four members and friends being present. Mr. Taylor dealt with the subject in a most lucid and concise manner. Beginning by illustrating the progression of the waves of light by comparing them to the motion communicated to a rope when the long, slow waves represented red light, medium waves yellow, and short rapid waves blue; he followed on by showing diagrams by means of the lantern, explaining that light proceeded from its source in a succession of hollow shells or spheres; the manner in which a minute ray of such wave of light would be transmitted by a pinhole or larger quantities of the wave would be condensed by a lens to form an image. In this connection he used and simplified Professor Sylvanus Thompson's illustration of a line of soldiers marching forward and encountering rough ground in their course, showing how the line of march would be altered by the obstacles met, and showed the similarity of effect when the waves of light meet a dense medium in their passage through the air in the shape of a lens. Having dealt with the principles involved, Mr. Taylor conducted his audience with equal ease through the bewildering varieties of lenses, explaining the suitability of each for its special purpose, and its disadvantages for others. Samples of lenses in various stages of preparation were shown, and the general methods of production explained. In answer to a number of questions, Mr. Taylor supplemented his lecture by dealing with standard tests for the desirable qualities in lenses, which might be applied by photographers, *e.g.*, for flatness of field, definition, and spherical aberration, mechanical perfection of surface of



lenses, centering of lenses in the mounts, ratio value of stop in single and R. R. lenses as compared with their actual diameter, and the coincidence of visual and chemical foci. These questions were dealt with in the same lucid and terse, yet exhaustive manner as the body of the lecture, and when Mr. Stewart moved, and Mr. Pither seconded a vote of thanks it was carried by acclamation. The lecture throughout was punctuated with applause, showing how closely it was followed by the audience, and their appreciation of the manner in which the lecturer had laid the matter before them. The next ordinary meeting will be on March 14th, when Mr. Walker will have a chat with beginners on "Photographic Procedure." Visitors welcome.

**North Surrey.**—At the usual fortnightly meeting on the 16th inst., Mr. J. Gale, who, as an honorary member, takes great interest in the Society, kindly attended and gave the members and their friends an exhibition of some of his recently prepared slides, accompanying their illustration on the screen with most interesting comments. The slides, which were all gems of art, evoked the greatest admiration from a numerous audience.

**Polytechnic.**—On the 19th inst. a most successful evening was spent by the members of the Polytechnic Society, when the AMATEUR PHOTOGRAPHER Prize Lantern Slides were exhibited. The good quality of the work was generally commented upon, and considerable interest was taken in the appearance of the portraits of the competitors upon the screen, the names of many of these gentlemen such as Austen, Cobb, and Dresser being well-known in the photographic world, and it says much for the value of the AMATEUR PHOTOGRAPHER when competitors of such calibre devote their energies to winning the prizes offered by the enterprising management of that journal. The method of packing the slides too was noticed to be extremely successful, as in spite of the many hundreds of miles of travel only two or three of the pictures had been cracked and split; the "get-at-ability" of the slides was also evident. One thing in connection with this show was the absence of particulars of the size of original negative, method of preparing the slide, etc. These particulars would add very much to the value of the exhibitions and would also go far towards settling a much debated point as to whether collodion or gelatine gives the best result in the hands of an average worker.

**Putney.**—Wednesday, 17th inst., Dr. W. J. Sheppard in the chair. Undoubtedly the most elaborate, and one of the most interesting and practical demonstrations before this Society, was given by Messrs. Burton and Braham, representing the Autotype Company, whose evening on "Carbon Printing" attracted these enthusiastic members, undaunted by the inclemency of the weather. A short introduction and history of the process by Mr. Braham was followed by detailed explanation, and the working of each stage in the process. Numerous prints, enlargements, opals, transparencies, in all colours, were arranged about the room; and samples of the tissue supports, with the various actinometers, were handed round for inspection. That the process possesses the merits of cheapness, beauty, and great simplicity, there can be no doubt. Its wider adoption by members of this Society is assured.

**South Hornsey.**—Ordinary general meeting held on the 15th inst., Mr. P. A. Legge in the chair. The Secretary reported the arrangements which the Council had made for holding an exhibition, etc., stating that the date had been fixed for April 7th, and that it would be held at Wortley Hall, next door to Finsbury Park Station. Mr. S. Lang then read a paper on "Intensification by Bichloride of Mercury and Ammonia," illustrating his remarks by intensifying two or three negatives.

**South London.**—Meeting, 15th inst., the President, Mr. F. W. Edwards, in the chair. Further donations of books for the Club library by the Fry Manufacturing Company and Mr. Slater were announced. Specimens of work with the Rodinal developer were shown, and the merits of it were discussed. The following proportions were found to give better results than those advised by the manufacturers:—1 part in 25 parts of water for negatives; 1 in 45 for lantern slides and transparencies; and 1 in 60 for bromide paper. The President brought to the meeting a large number of prints from isochromatic and ordinary plates, and explained the occasions on which the use of the former was advantageous. Mr. Miller exhibited some prints from negatives taken on Britannia plates, which had been kept at the Cape for twelve months before use. The platinotype paper used was over two years old, and the results were quite equal to any which can be obtained on fresh plates and paper. The competition for the best print on bromide paper had but few entries. Mr. Whitby was declared to have produced the best results. Messrs. Whittingham and Co. showed their new pattern cameras for the coming season.

**Southsea.**—The 1891 Prize Slides kindly lent by the Editor of the AMATEUR PHOTOGRAPHER were exhibited on the evening of the 17th inst., before an audience which, but for the severity of the weather, would have been much larger. The slides were freely commented on, and for the most part elicited hearty expressions of admiration. When all were so good it would be invidious to

particularise. In the report of the election of officers for 1892, the name of Mr. G. Whitefield, who was re-elected Assistant Secretary, was inadvertently omitted.

### SOCIETIES' FIXTURES.

- Feb. 25.—DEWSBURY.—"Ilford P.O.P. and Alpha," by J. Howson.  
 " 25.—HACKNEY.—Lantern Evening.  
 " 25.—LONDON AND PROVINCIAL.—Members' Open Night.  
 " 25.—CAMERA CLUB.—Lantern slides.  
 " 26.—RICHMOND.—"Finishing in Monochrome," by H. Durham.  
 " 26.—WEST LONDON.—Lantern.  
 " 26.—CROYDON.—Lantern night.  
 " 27.—PUTNEY.—"Exposure," by F. Farrar.  
 " 27.—Brixton and Clapham.—Smoking Concert.  
 " 29.—CROYDON.—Lantern night.  
 " 29.—PLYMOUTH GRAPHIC.—Exhibition.  
 " 29.—WEST LONDON.—Special general meeting.  
 " 29.—ROCHDALE AND DISTRICT.—Lantern.  
 " 29.—JERSEY.—Open to amateurs.  
 " 29.—CHISWICK.—"Lenses," Mr. Stedman.  
 March 1.—HEXHAM.—"Printing Papers."  
 " 1.—GREAT YARMOUTH.—Paper on "Hand Cameras."  
 " 1.—NORTH LONDON.—"Platinotype Printing."  
 " 1.—HEREFORD.—Charity slides.  
 " 2.—ELIZABETHAN.—"The Lantern."  
 " 2.—ISLE OF THANET.—Lantern slides.  
 " 2.—JERSEY.—Exhibition.  
 " 3.—COVENTRY.—Ordinary.  
 " 3.—CAMERA CLUB.—A complete demonstration of the Carbon Process, by Autotype Co.  
 " 3.—SOUTH HORNSEY.—"Lantern Slide-making," by Hudson.  
 " 3.—LONDON AND PROVINCIAL.—"A New Enlarging Lantern without Condensers."  
 " 3.—ASHTON-UNDER-LYNE.—"Kallitype," by Mr. G. R. Candelet.  
 " 3.—LEIGH.—"The Lantern," by Mr. W. Drabble.  
 " 3.—DUNDEE AND EAST OF SCOTLAND.—"Lantern Slide Exhibition," by A. R. Dresser.  
 " 3.—DARLINGTON.—Annual Exhibition and Conversazione.  
 " 3.—Brixton and Clapham.—Lantern night.  
 " 3.—GLASGOW.  
 " 3.—EDINBURGH.—"Eastern Europe."  
 " 3.—NORFOLK AND NORWICH.—Paper on "Hand Cameras."  
 " 3.—LEEDS.—"Notable Places in Wiltshire."  
 " 4.—RICHMOND.—Lantern night.  
 " 4.—BRISTOL.—"White Mountains of New Hampshire."  
 " 4.—WEST LONDON.—Technical social evening.  
 " 4.—LEWISHAM.—Lantern Night.  
 " 4.—HOLBORN.—"Exposure," by E. Benest and H. Thompson.  
 " 4.—POLYTECHNIC.—"Flashlight Photography," by Mr. T. Paternoster.

**Painting Lantern Slides.**—Epitome of paper given before the Dewsbury Amateur Photographic Society, February 11th, 1892, by Mr. A. S. Marriott:—In painting photographs on glass for the limelight lantern ordinary oil colours are used, but only those which are transparent; they are mixed with a little nut oil or megilp if too thick. The following colours are specially useful:—Prussian blue (pure) for sky, and with Italian pink for green foliage; asphaltum for brown foreground; burnt umber for woodwork; crimson and burnt umber for flesh colour. The local colours of objects are not much attended to; effect only is aimed at, and the colours are put on broadly and worked into each other by means of gentle dabs with the finger ends, small patches of a different colour being inserted with a fine sable brush after cleaning the spot with a piece of rag on the end of a sharp stick. Gum dammar has been recommended for extra brilliancy, and benzol for quick drying. They may be varnished, if desired, with ordinary negative varnish, thinned with methylated spirit. It is recommended to take notes of the colours in nature at the time the photograph is taken, and, if possible, make a sketch in watercolours or crayon. In the absence of this a knowledge of the laws of harmony applied to colouring is most desirable.



## ON TONING SILVER PRINTS WITH PLATINUM.

BY E. VALENTA.

A NUMBER of toning baths have been recommended by different writers for toning silver prints on plain or matt surface paper with platinum, all of which have for their chief aim the conversion of the silver image as completely as possible into a platinum one by replacing the silver with platinum by means of the toning bath. This end is attained by the aid of the various baths more or less completely in a shorter or longer time. The numerous experiments which I instituted with my resin emulsion paper showed plainly that the duration of the toning process with the different baths is actually determined by the acid contained in the same and the quantity within certain limits of an equal proportion of platinum salt. Besides this it is advantageous, as already stated by Dr. Eder, to use chloro-platinite of potash instead of the frequently recommended bichloride of platinum, since the same quantity of silver precipitates twice as much platinum from a solution of chloro-platinite of potash as from a solution of the bichloride.

Those baths tone the slowest which contained acid tartrate salts or phosphates, and those platinum baths which contained free organic acids, such as tartaric, citric, or acetic, act quicker, and it is evident that within certain limits an increased proportion of such acids considerably shortens the duration of the toning process. For instance, experiments with the bath recommended by Gastine:—

|                                                     |     |    |    |    |    |    |               |
|-----------------------------------------------------|-----|----|----|----|----|----|---------------|
| Salt                                                | ... | .. | .. | .. | .. | .. | 20 parts      |
| Acid tartrate of soda                               | ..  | .. | .. | .. | .. | .. | 10 "          |
| Water                                               | ..  | .. | .. | .. | .. | .. | 300 "         |
| 10 per cent. solution of chloro-platinite of potash | ..  | .. | .. | .. | .. | .. | 5 to 7 parts, |

diluted with 1,600 parts of distilled water, gave no pure platinum black, but brownish tones, which, indeed, are sometimes desirable. The dark violet tone of the salted paper print went slowly into a blackish brown and finally into the black tone of the true platinum print. The toning lasted about thirty minutes, and the pictures did not show after fixing, washing, and drying, the desired depths of blacks. Better results with considerably shortened duration of the toning process I obtained when I replaced the acid tartrate of soda by increasing quantities of free tartaric, citric, or acetic acids.

The best result, however, resulted by the following procedure when using salted resin paper:—(1) Toning very vigorously printed images of silvered resin paper previously exposed for ten minutes to the fumes of ammonia in a fresh or previously used gold bath for a short time. (2) Immersing the prints well washed with water in a platinum toning bath, composed of 300 parts of water, one part of chloro-platinite of potash, and ten to twenty-five drops of nitric acid. (3) Fixing in a bath consisting of 120 parts hypo, ten parts of acid sulphite of soda to 1,000 parts of water, then washing in running water and drying. With a small proportion of nitric acid—for instance, three or four drops in the toning bath—the action on the silver image is slow. This will take place so much quicker the greater the proportion of nitric acid is, of course within certain limits; and there appeared, with a proportion of twenty to twenty-five drops of nitric acid in 300 cc.m. of toning bath, almost instantaneous blackening. The toning process is very quickly ended, and it is necessary when the desired tone is reached to take the picture from the bath, to wash well with pure water, and place in the fixing bath. Fixing is effected in ten to twelve minutes. The picture should then be washed well for three or four hours in running water and dried.

A too long immersion of the picture in the platinum bath would produce a partial destruction of the delicate half-tones which must be avoided.

## A PHOTOGRAPHIC SOCIETY FOR NORTH WALES.

NORTH WALES so far has been sadly "behind the times," for though there are some 250 photographic societies and camera clubs in Great Britain, only three of these are in Wales, and these three are in the southern portion of the principality; the North has, however, woke up at last, and on Thursday, the 18th inst., a meeting was held at the Llandudno news-rooms and library to consider details for the formation of a society to be called the North Wales Photographic Society. Among those present were Messrs. Catlin, Campbell, Hughes, Elias Jones, Whiston. Letters

were read from Messrs. Henderson, Pilkington, and others unable to be present owing to illness, but approving of the movement. It was decided to at once erect dark-rooms at the headquarters (the news-room), also to set apart a room three days in each week for use of the society. Meetings will be held the 1st and 3rd Thursday in each month, and once a month a lantern exhibition, demonstration, or soirée will take place. Visitors to the town will be able to join the society for the time they are staying, on payment of a subscription of 1s. per week, and 1s. per hour for use of dark-rooms, including gas lamp, fixing bath, and use of developing trays, etc. A sum of 3d. will be charged for dark-room for plate changing purposes, time not to exceed ten minutes. As upwards of half a million people visit this most beautiful of all watering places each summer, a large portion of whom belong to one section or the other of the vast army of amateur photographers, viz., "plate spoilers" or "picture makers," the formation of this society ought to be a great boon to many.

On Friday, the 19th inst., a paper was read on "Amateur Photography," in the rooms of the debating society, by Mr. W. A. Whiston. The Rev. J. Raymond was in the chair. The paper was a very complete one, touching on Daguerre, Fox Talbot, and others as early inventors; the wet plate process was fully described, as were the early attempts at making dry plates, and finally the gelatine emulsion process as now applied. The use of the different lenses and cameras, swing-back and rising front, etc., was next lucidly explained. The last portion of the address consisted of practical demonstrations, during which a photograph was taken on the stage of the worthy Chairman by flash light, resulting in a first-rate negative, which was developed in view of the audience; it was then fixed and dried with methylated spirit, and a lantern slide printed within a very few minutes; this was in its turn developed, fixed and dried, and put into the optical lantern. This demonstration was greeted with loud and prolonged applause. A quantity of imperfect slides were then passed through the lantern, the demonstrator pointing out the faults in each. The oxy-hydrogen lantern, fitted with Beard's regulator, was most ably manipulated by Mr. Hughes, of Rochester House, and a very enjoyable and instructive lecture was brought to a close.

**Fry's Evening Demonstrations: Mr. Chadwick on Stereoscopic Photography.**—A most interesting hour's talk was given by Mr. Chadwick on the 5th inst., at 5, Chandos Street. The lecturer illustrated his remarks on monocular and binocular vision with diagrams of the eye, and upon stereoscopic photography, with the apparatus employed for the purpose. After an address of about forty minutes of so interesting a character as to appear all too short, Mr. Chadwick then passed round and explained his apparatus. A noticeable point was, the simplicity of the working parts, and the absence of screws, etc., etc., which so often are a snare and a delusion at a moment of pressure. A series of questions from an interested audience followed, which were lucidly and humorously replied to by the lecturer; to whom was passed a very hearty vote of thanks for his attendance. As a result of the lecture, Mr. Chadwick will probably have a stock of his special apparatus on show and sale at the Fry Manufacturing Company's Show-rooms, Chandos Street, where a capable attendant will be present to demonstrate, and explain the minutiae of stereoscopic procedure. A very interesting collection of stereoscopic slides was shown during the evening, some of which were the prize-winners in the competitions of THE AMATEUR PHOTOGRAPHER.

**Jacko's Jinks.**—Under this title Messrs. Dollond and Co., of Ludgate Hill, are introducing a new series of humorous slides which tell the tale of a professor and his pets, and the result of the professor leaving home. The slides are of first-class quality, and are well worth showing to any audience of the general public to relieve the tedium of a purely photographic set.

**Social Evening.**—On Saturday afternoon the employes and friends of Messrs. Percy Lund and Co., to the number of over one hundred, held their annual social evening in the Temperance Hall, Bower Street. Tea was served at 4.30 p.m., and at 6.0 o'clock the entertainment was commenced with a few opening remarks from Mr. Percy Lund. The principal items of the programme were an action song, "Merry Gleaners," in which twenty-four of the junior employes took part; and a performance by the Practical Professional Amateur White Minstrels. A number of songs, duets, recitations and instrumental items were given, with games interspersed.

We understand that the suits between the Celluloid Company, of America, and the Eastman Company, of Rochester, U.S.A., have now been satisfactorily settled in the interests of both parties.



## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

5470. **Reproducing Negative.**—Will some one kindly tell me how to produce a plucky negative from a thin negative. —NEDGO.

5471. **Detective Lens.**—Can any reader inform me where I can obtain the best lens for a hand-camera working at a fixed focus of about  $\frac{1}{3}$  in., which will cover a quarter-plate sharply to the edges, for all objects beyond about 10 ft.? —CYANIDE.

5472. **Lantern-slide.**—Can any reader tell me how to produce lantern-slides from negatives without special apparatus. I have a quarter-plate camera with R.R. lens. Any assistance would greatly oblige. —P. D. BARNETT.

5473. **Film Varnish.**—Can any reader inform me if a varnish made of the following, and applied to celluloid films directly after washing, would be injurious to the films—

|                 |    |    |    |        |
|-----------------|----|----|----|--------|
| Pale orange lac | .. | .. | .. | 64 gr. |
| Borax           | .. | .. | .. | 20 "   |
| Glycerine       | .. | .. | .. | 1 drm. |
| Water           | .. | .. | .. | 5 oz.  |

The above does well for plates. —F. C. M.

5474. **Nickel-plated Screws, etc.**—Will any one kindly tell me where to procure nickel-plated wood screws (brass or iron), and aluminium strap and butt hinges? —QUADRAGESIMUS.

5475. **Devanishing.**—Will any reader kindly tell me how to remove varnish from negatives without damaging the film, also how to make a good reliable negative varnish? —WILTS.

5476. **Corsica.**—I intend going to Corsica in the middle of April for a six weeks' trip. Can anyone kindly tell me (1) the views most worth taking; (2) whether permission is necessary; (3) whether plates, chemicals, and dark-rooms are to be found in principal places? —H.

5477. **Spirits of Wine.**—How is it when I put methylated spirits on the film side of a plate so as to get it to dry quickly a white substance gathers quickly over the plate, and when I try to wash it off it only becomes worse? What is this substance, and how can it be got off the plate? The chemist told me it would get white in water, as the Excise officers had put something in it. —ALLIANCE.

5478. **Paper.**—Will any reader kindly tell me what sort of paper I ought to use for pasting on the back of negatives for working on them with a stump and black-lead? I have tried thin tissue and tracing papers, but find they cause a mottled appearance on the light parts of the print. Should the paper be pasted on all over, or only at the edges of the negative? Any hints will greatly oblige. —HAMISH.

5479. **Lens.**—Could any kind reader tell me the name of the lens sent out with Lancaster's International half-plate camera? Is it a rapid rectilinear or a single landscape lens, or is it better than a single landscape lens? —PYRO.

5480. **Ilford Printing-out Paper.**—I have just bought some sheets of the above paper and find it prints violet, and after toning it goes a sickly yellow in the fixing bath. Some sheets I bought before printed red, and I managed to tone them alright. Could any reader tell me why it should print red, and sometimes print so violet, and the cause of it going so yellow in the fixing bath? —PYRO.

5481. **Shutter.**—In reply to "G. P.'s" answer concerning my shutter, I think he does not understand my query. What I really want to know is if the shutter works too quickly (a rebounding one) for the lens, being a single landscape one, and if so, how can I make the shutter work slower (not the lens)? —PUZZLED ONE.

5482. **Watkins' Exposure Meter.**—Will any reader kindly give me his experience with the Watkins

exposure meter? Can one really make sure of having the correct exposure, and what is about the average time occupied in determining the same? —MACSPORRAN.

5483. **Washing Negatives, etc.**—In washing negatives, prints, etc., is it necessary to be done in the dark? Now, at the house where I live we have no tap water laid on; we have only a pump in the yard. Can any fellow amateur tell me of any way whereby I could save the trouble of having to go out and pump on negatives, etc.? This I had to do last year, as I could only work late at night, and then spoil several prints. Any suggestions will be appreciated. —P. W. C.

5484. **Keeping Pyro.**—Will any brother amateur tell me if pyro will keep alright in the dry state after opening the bottle, when I want to use it for developing, which will only be a few grains occasionally, if I put the cork in again and cover it over with paraffin and tie it down; and is it best to use it dry for instantaneous and other exposed plates? I use ammonia; is it preferable to potash and soda for instantaneous exposures? —R. V. B.

## QUERIES UNANSWERED.

- Jan. 8.—Nos. 5348, 5364.  
 " 22.—Nos. 5379, 5382, 5383, 5392, 5395, 5396.  
 " 29.—Nos. 5399, 5400, 5409, 5413.  
 Feb. 5.—Nos. 5419, 5420, 5423, 5429.  
 " 12.—Nos. 5433, 5436.  
 " 19.—Nos. 5445, 5447, 5458, 5468.

## ANSWERS.

5380. **Making Lantern Slides.**—You cannot make a lantern slide from a silver print direct. You must first make a negative from the print, and then make the lantern slide from the negative. —HERALD.

5422. **Presto Camera.**—This is a wonderful little instrument for the money, and if you make some very small card stops, will take very good pictures of interiors. It could very easily be fitted to a stand, but the great disadvantage is that you cannot focus it. You will find Lancaster's quarter-plate La Meritoire one of the best of cheap cameras. —HERALD.

5430. **Development.**—Immerse the plate in a diluted solution of No. 2, say (if a half-plate)  $\frac{1}{4}$  oz. to 1 oz. water to which you have added  $\frac{1}{2}$  oz. of No. 1; let it remain in this solution for five minutes, then pour off into measure, and add another  $\frac{1}{2}$  oz. of No. 1; flow the amended solution over the plate, and the detail will shortly come out; when the detail is deemed sufficient, pour off the solution into a bottle for future use, and finish development with a new full-strength developer; develop till all is black. I have found this method very satisfactory for instantaneous work. —T. DOWLING.

5430. **Development.**—I developed an Ilford rapid plate exposed at Carnarvon December 2nd, snap-shot, with Ilford hydro, by soaking it in B solution for 15 min.; then taking plate out, I added A solution, and as much water as both solutions together. The result was fairly good, but probably would have been better still if I had put more water. Of course, I kept plate covered up from light during development, with a cardboard box cover. Development of winter snapshots must be slow, or you will not get density. —HERALD.

5432. **Hymns for Slides.**—"W. P. C." would be most likely to get what he wants at the chief depots of the Society for Promoting Christian Knowledge, or the Religious Tract Society, or the National Society. Of course, they would only have the most popular ones. Let him ask for "picture bandbills" or "bymns on sheets." They are only a penny each. The handbills, of course, are much cheaper. —E. A. H.

5440. **Development.**—You will not be able to get good results with snapshots at this time of year on Ilford ordinary plates, except cloud and water subjects, as the light is not strong enough. See answer to 5430. Temperature of hydro. developer must be kept up to about 60 deg., or it will not act in frosty weather. I warm mine in developing cup on top of red lamp. —HERALD.

5441. **Carriers.**—I got some from W. G. Roberts, Leytonstone, E., 6d. each. —P. J. T.

5441. **Carriers.**—Lancaster's supplied me with a carrier, similar to the one you mention, for 1s. 6d. —C. J. E.

5441. **Carriers.**—If "S. L. W." will cut a piece of thin, bard wood to exactly half-plate size, and in the middle of it cut a hole just large enough for a lantern plate to slip through, and finally fasten four small pieces of cardboard at the corners to project over the edges slightly, and prevent the plate from going right through, he will have a carrier that will have cost him practically nothing at all, and which is in every way equal to any sold. The wood must be so thin that the slide will close quite tightly when it is in. —R. A. R. BENNETT.

5441. **Carriers.**—I had quarter-plate carriers made for my camera; the charge was 1s. 6d. each. It is just as easy to have  $\frac{3}{4}$  by  $\frac{3}{4}$  size as  $\frac{1}{4}$ ; any photographic dealer will make them for you. You could make them yourself out of a cigar box. I made four that way. I thought it was "a joke carried too far" to pay six shillings for carriers only. —CYANIN.

5441. **Carriers.**—You will be able to obtain a half-plate carrier with any size opening from Mr. W. Tylar, 57, High Street, Aston, Birmingham, or of any of his

principal agents. The price, I believe, is about 1s. or 1s. 6d. —P. D. BARNETT.

5442. **Hand-Camera.**—Can strongly recommend Underwood's "City" hand-camera. Have used it last season to photograph narrow courts of London elums, and have got negatives which make good lantern-slides when enlarged; up to 10 ft. square. Price, I think, was 28s. 6d.; holds twelve quarter-plates; bag changing; ever-set shutter. —FOWLER.

5442. **Hand-camera.**—Either Griffiths' or Talbot and Eamer's Guinea hand-camera, which, if polished, and have a couple of view-finders added, will cost about 25s. —W. B. SMART.

5442. **Hand-Camera.**—Can recommend a good quarter-plate hand-camera which carries twelve plates, only two movements (sure and simple). Price, quarter-plate, 30s.; lantern, 25s. If "S. L. W." resides in London, he can see mine if he call upon me. Address with Editor. —F. C. W.

5443. **Copying.**—Place a sheet of clean glass over the engraving, and bind down tightly to a board placed at the back of the engraving, with several thicknesses of velvet or flannel between the engraving and the board. Tie string round the whole so as to pass over the margins only of the engraving, and insert wooden wedges at the back to tighten the string. If engravings are in a book, proceed in the same way, only using the book instead of a board and pad. If necessary, a pad can of course be placed between the leaves. —AMMER TUGHER.

5443. **Copying.**—You ought to mount them to entirely remove creases; but if you would rather not, then try the following plan: Cut two strips of wood about an inch longer at each end than the print. Fasten the top of the print to a large flat board by placing the edge under one piece and nailing down the strip of wood by nails through the ends, outside the print. Then get out all the creases you can by stretching it, and fasten the bottom down in just the same way with the other piece of wood. —R. A. R. BENNETT.

5443. **Copying.**—If the engravings are wrinkled, slightly damp them and iron them between two pieces of clean paper. Then pin them on a board and let the light fall on them, not from the side. —HERALD.

5443. **Copying.**—Slightly damp the back of the engraving and paste it about half an inch or less from the edge all round, lay it on a drawing board, press the edges slightly with the fingers to make the paste adhere, and let all dry together slowly. Be careful not to put the paste where it is not wanted, e.g., on the face of the engraving, or in the centre of back. The paper can be afterwards taken off the board by laying a slip of damp cloth on the face along the edges where pasted. —EXPERT.

5444. **Reducer.**—The reducer which I prefer is perchloride of iron. First soak the negative in a hypo bath of the usual strength, then wash and soak in solution of perchloride of iron; the exact strength does not much matter, a few drops of saturated solution can be added to 2 oz. of water, and, if wanted very energetic, two or three drops of hydrochloric acid added. Leave in for a few minutes, and place back in the hypo bath, after rinsing. Finally wash well again. Don't leave too long in the iron solution, as the full amount of reduction is not seen until it is restored to the hypo. This is a capital bath for clearing yellow negatives. —R. A. R. BENNETT.

|                              |    |       |
|------------------------------|----|-------|
| 5444. <b>Reducer.</b>        | .. | 1 oz. |
| (A) Ferriyanide of potassium | .. | 20 "  |
| Water                        | .. | 20 "  |
| (B) Hyposulphite of soda     | .. | 1 "   |
| Water                        | .. | 20 "  |

Cover the negative with sufficient of B, add four to six drops of A. When sufficiently reduced remove and wash thoroughly. —CYANIN.

|                                          |             |    |        |
|------------------------------------------|-------------|----|--------|
| 5444. <b>Reducer.</b>                    | Solution 1. | .. | 29 gr. |
| Chrome alum                              | ..          | .. | 1 oz.  |
| Distilled water                          | ..          | .. | 1 oz.  |
|                                          | Solution 2. | .. | ..     |
| Eau de Javelle or Labarraque's solution. | Reducer.    | .. | ..     |

|            |    |    |    |       |
|------------|----|----|----|-------|
| Solution 1 | .. | .. | .. | 1 oz. |
| Solution 2 | .. | .. | .. | 1 oz. |
| Water      | .. | .. | .. | 1 "   |

Soak negative thoroughly, then flow on reducer, and when sufficiently reduced, wash and refix in hypo. Good for local reduction by using a little of solution 2 on ball of the finger. (From Wall's "Dictionary.") —B. SMART.

5446. **Halation.**—Halation is caused by light reflecting from back of sensitive plate, thereby blurring those parts in the negative where there is extreme contrast of light and shade. It can sometimes be removed by reducing locally. To prevent it, back plates with

|             |    |    |    |        |
|-------------|----|----|----|--------|
| Gelatine    | .. | .. | .. | 50 gr. |
| Glycerine   | .. | .. | .. | 1 oz.  |
| Water       | .. | .. | .. | 1 "    |
| Ivory black | .. | .. | .. | 30 gr. |

—B. SMART.

5446. **Halation.**—"Where ignorance is bliss 'tis folly to be wise." You will not remain long without knowing what halation is. Take your camera into a dark church and try to photograph the east window with the sun shining outside. You will find that everything at that end near the window will be in a regular blur. This is halation. Often occurs in branches



of trees seen against bright sky. Remedy—back the plate.—R. A. R. BENNETT.

5446. **Halation.**—Rays of light passing through the glass of an unbacked plate strike the air, and this being of a thinner medium, the light is reflected back through the glass and on to the sensitive film, and makes its appearance in the picture by encroaching on the dark parts of the image. This is halation.—T. DOWLING.

5448. **Cycling.**—I always carry my camera and dark slides in a bag slung from the safety bicycle handle. I think vibration is practically avoided. I should advise "Tuom Ilmarinen" to use celluloid films; either England's or Thomas' are excellent. The tripod I carried also hanging in a canvas bag from the handle, but the bottom of the bag I secured to the frame of the machine above the foot rest.—R. C. McLEOD.

5449. **Enlarging.**—The approximate distances can be better ascertained by actual trial than by calculation; especially as the lens, nominally 5 in. focus, may be  $4\frac{1}{2}$  in. or  $5\frac{1}{2}$  in., and the negative may not be exactly  $\frac{1}{4}$  by  $\frac{3}{4}$ , this would affect the calculation considerably. Even if "Ructana" were furnished with the exact distances, they would probably be in fractions of an inch, to which he could not accurately adjust his apparatus. Enlargements with a lens of 5 in. focus will not be very flat. Using stops will not affect the distances.—EXPERT.

5450. **Opalines.**—Opalines are prints squeezed upon glass plates, and backed with cloth or leather.—Write to Lund and Co., Bradford.—ANON.

5450. **Opalines.**—If you write to Messrs. Percy Lund and Co., St. John's Street, Bradford, Yorks, they will send you all particulars, and supply you with all required materials.—R. A. R. BENNETT.

5451. **Lens.**—Advantages:—only using the central or best portion of the lens, you get better general definition with a larger aperture; the lens being of long focus in proportion to the size of plate, gives a more pleasing picture of some subjects. Disadvantages: you have to get further away from your subject, which is not always practicable.—C. J. E.

5451. **Lens.**—The advantage of using a half plate lens in a quarter-plate camera is that a larger image is produced, and greater equality of illumination than a smaller lens would give, and the narrower angle included on the plate is generally considered to produce a more natural and artistic picture. The disadvantages are small compared with the above, the lens being heavier, also more expensive; and a half-plate lens being a longer focus gives less depth than would a smaller one.—P. D. BARNETT.

5451. **Lens.**—The advantages are that you get the centre of lens to work with. This will ensure the picture being sharp to the edges. The only disadvantages are that you cannot get so close to your subject, and perhaps your camera won't rack out far enough to take the extra length of focus. Many of our best photographers always work with a size larger lens, especially for landscapes.—P. J. T.

5452. **Enlarging.**—White tissue paper is a splendid substitute for frosted glass. Use four pieces instead of two.—CYANIN.

5452. **Enlarging.**—Practically the only difference between the effect of light passing through ground glass and clear glass with tissue paper on each side of it, would be in the quantity of light that passes through, the latter being more opaque. Both ground glass and tissue paper differ very much in their degrees of opacity.—EXPERT.

5452. **Enlarging.**—Tissue paper would do, but there would be considerably more loss of light than with frosted glass, as the light passes between the fibres of the paper, and not through them.—AMNER TUGHER.

5453. **Dark-room Light.**—The effect of putting ground glass between the ruby glass and the flame of a lamp would be to lessen and diffuse the light, rendering the shadows indistinct; it also makes the light appear less red, but does not affect its non-actinic power.—EXPERT.

5453. **Dark room Light.**—It would have the effect of diffusing the light and rendering it safer.—T. DOWLING.

5454. **Cabinet Work.**—Better send the camera to Mr. Lancaster to be altered. Having everything ready to hand he would do the work better and cheaper than any one else, and even in the unlikely event of his charge being higher than that of a local cabinet maker, you would be quite sure of a satisfactory result and run no risk of the camera being injured.—EXPERT.

5454. **Cabinet Work.**—Better send it to Lancaster. If residing in London, write me through Editor, and I will give you the name of a first-class working camera maker, who is most reasonable in his charges.—H. W. B. B.

5454. **Cabinet Work.**—Lancaster, of Birmingham, would do what you require. Should advise you to sell through "Sale and Exchange" column of AMATEUR PHOTOGRAPHER, and buy a new camera and slides. Would be much cheaper.—F. C. W.

5455. **Shew's Adapter.**—(1) This useful improvement is strongly recommended, as it has a reversing frame and enables the operator to take either horizontal or vertical pictures. (2) It has the advantage of being removed when desired. N.B.—A small charge is made for fitting it to camera, about 1s. 6d.—P. D. BARNETT.

5455. **Shew's Adapter.**—Answers perfectly.—H. W. B. B.

5456. **Copying Book Engravings.**—Place the engraving close as possible to the window, stop down to f/16, give 20 sec., and develop slowly.—T. DOWLING.

5458. **Copying Book Engravings.**—Use either Mawson's lantern plates to make your negatives on, or else their photo-mechanical plate, quarter-plate size. Either of these will give very clear and vigorous images, especially when developed with hydroquinone. Of course, they are much slower than the Castle plates.—C. J. E.

5456. **Copying Book Engravings.**—I have recently tried this, and find that I cannot get good results by exposing indoors, no matter how good the light. But out of doors, noon, on a bright day I can get any amount of contrast. Note that the smaller the engraving, and the more the camera is racked out, the longer must be the exposure.—HERALD.

5456. **Copying Book Engravings.**—I have done a good deal of this work, and find the best plan is to give a rather short exposure and use either hydroquinone or sodic sulphite developer, developing very slowly. Berkeley's sulphite formula works best. But if the engraving is not distinct in the book, nothing will make it clear, unless you can first trace it over with black ink. Develop farther than with ordinary subjects.—R. A. R. BENNETT.

5457. **Enlarging.**—I have overcome the same difficulty by copying a page with fairly large printing on it, and using the resulting negative to focus with. I tried a transparency first, but found that, being a positive, I had to place it in the carrier the film side away from the paper. Take care your focussing negative is sharp and thin, so as to let through plenty of light.—R. C. McLEOD.

5459. **Glass Positive.**—I have exposed an extra rapid plate under an average negative to candle light for a few seconds, and found it over exposed, so that daylight is out of the question. Use a slow plate, candle light, and move printing frame a bout, so as to get even illumination, giving a little longer to any dense part. Develop as usual, only well restrain, and if using pyro, use plenty of soda sulphite. The positive will be improved in colour—unless a brown is preferred—by using the alum, citric acid, and iron sulphite clearing bath.—ARGAURUM.

5459. **Glass Positive.**—(1) Yes. (2) Artificial light. (3) Slow by all means. (4) Ordinary development, well-restrained developer.—C. J. E.

5459. **Glass Positive.**—(1) Yes, they are usually so made when negative and positive are of similar size. (2) Artificial light is preferable. (3) Plates are sold for the purpose, with instructions, called "transparency plates," in all sizes. (4) Use hydroquinone developer.—H. W. B. B.

5459. **Glass Positive.**—(1) Yes. (2) Either; but artificial is preferable, being so much more under control. (3) Slow, preferably. (4) Yes; but if for a transparency, use hydroquinone or ferrous oxalate.—R. A. R. BENNETT.

5459. **Glass Positive.**—You can make a glass positive transparency with Ilford ordinary plate in contact with negatives in printing frame exposed to gas 3 sec., about 14 in. from burner. Daylight is too strong. If negative is rather weak, double the distance and give four times the exposure. Develop with Ilford Universal hydro, which will give strong black tone.—HERALD.

5460. **Windsor Burnisher.**—Wells, Gallimore, and Taylor, Windsor Foundry, Windsor Street, Birmingham. The prices range from 10s. 6d. for  $4\frac{1}{2}$  in. roller to 24s. for 12 in.—T. DOWLING.

5461. **Enlarging.**—Yes. The size of the enlargement does not always depend directly upon the size or focus of the lens. In the case of a direct enlargement, e.g., from glass negative to paper print, the size is unlimited as far as the lens is concerned. To make an enlarged negative from a small one the largest size depends upon the camera and the lens. The R.R. quarter-plate lens will do for enlarging, in the absence of a better, but the best to use would be a half, three-quarter, or even a whole portrait lens, but these are expensive. (2) See reply to 5449.—EXPERT.

5461. **Enlarging.**—(1) Certainly you can; and rate of enlargement is only restricted by the amount of light at your command. (2) Experience is better than figures. You have only to stand the negative up before a light, and then move your lens backwards or forwards until you get the size you want on the frosted glass.—AMNER TUGHER.

5462. **Developing.**—See my reply last week for Formulae, No. 5431. The eikonogen developer, No. 2, works well, when made up accordingly.—CYANIN.

5463. **Films.**—These work quite as satisfactorily as glass plates, but you must get suitable carriers for them. Carbutt's are reliable, and you can get them in several rapidities, including "instantaneous," at the Stereoscopic Company's. No difficulty in developing, but use hydroquinone or soda solutions, and not ammonia.—P. G. H.

5463. **Films.**—I have worked Fitch's films, whole and half plate. I took over eight dozen to Normandy and Brittany last year, and found them eminently satisfactory.—TOWERS.

5464. **Ilford Printing-out Paper.**—On same page as query,  $\frac{1}{4}$  in. more to the right, you have an answer. It does remarkably well, and is the least trouble of any.—R. A. R. BENNETT.

5464. **Ilford Printing-out Paper.**—Yes, but better use the toning bath recommended with the paper,

which is very good, and fix separately. This tends to increased permanency.—H. W. B. B.

5454. **Ilford Printing-out Paper.**—Yes, certainly; this process saves time, but greater care is required.—B. SMART.

5465. **Naming Dishes.**—I did it myself by painting on the sides, outside, with a mixture of lamp-black and gold size. Let dry, and put on three or four coats of varnish. Unfortunately, it rubs off in time and has to be renewed.—R. A. R. BENNETT.

5465. **Naming Dishes.**—If you had kept your eyes open and read what appeared in the AMATEUR PHOTOGRAPHER for February 12th, 1892, under the heading of "Elementary Photography," by Mr. J. A. Hodges, there would have been no need to ask such a question. In the first place you require: (1) For washing before and after development and final washing, to be labelled "water." (2) For fixing after development (this may also be used for fixing after toning), labelled "fixing." (3) A large dish, named "toning," used for that purpose only. (4) Another labelled "extra." The above four dishes will satisfy for most of the printing processes; for instance, we will take bromide. First washing in No. 4 (extra), development in same, clearing in dish labelled "water," fixing in No. 2. Wash thoroughly No. 1, and immerse print in it for the last washing. Remember, clean dishes are a *sine qua non*. I myself make it a point to wash all the dishes used with soap and water and a hard scrubbing brush before putting away; you cannot do better.—CYANIN.

5466. **Opaline Glasses.**—Messrs. Percy Lund and Co., St. John's Street, Bradford, Yorks. *Vide* answer to 5450.—R. A. R. BENNETT.

5463. **Opaline Glasses.**—"Enlarging" can obtain the opaline glasses and backs any size from Messrs. T. and H. Doublet, of 11, Moorgate Street, City.—A. W. COOK.

5467. **Enlarging.**—(1) Yes. (2) Choose a window, if possible, from which there is an uninterrupted view of the sky. Carefully close it all up with brown paper, except a space sufficiently large to contain a printing frame holding the negative to be enlarged; the frame must be without its back and springs. The negative can be supported by tacks, and the film side should be placed inwards towards the room. This frame can easily be supported in position by strips of wood, one above and one below, screwed at each end to the frame. To the lower strip attach a shelf large enough to hold your half-plate camera. Now place your camera on this shelf with its lens pointing away from the window. Now place on a table a board covered with white paper. This is your focussing screen. By moving to and fro on its shelf, the image may be sharply focussed. Take a piece of bromide paper the required size and fasten it to your screen, first covering your negative with a piece of cardboard. The exposure is made by taking the cardboard from the negative (according to the rapidity of paper, the power of light, and density of the negative).—P. D. BARNETT.

5469. **R. R. Lens.**—I have just bought a 5 by 4 R. R., working f/6, iris stops, for 30s. If "R. A. W." likes to write me I will give him the name and address. It is a splendid lens.—P. J. YARROW (address with Editor).

5469. **R. R. Lens.**—Try Optimus R. R.,  $5\frac{1}{2}$  in. focus, price 33s.—U. B. SMART.

## EDITORIAL.

W. M.—(1) Slightly overtoned, and would have been improved by inclusion of all the bridge. (2) Good. (3) Good, up to competition standard. (4) Utterly without interest; it wants life to give some interest; we cannot understand your description; bring the camera up any day but Wednesday.

C. E. T.—(1) It is not absolutely essential to use a film carrier, but advisable. (2) Write to Mawson and Swan for their new film dark-slide. (5) All film carriers are so made as to be in absolute register with screen.

J. KILSON TAYLOR.—We hope to return your prints this week.

T. D. BURNS.—We prefer B.

H. W.—Your print received. Many thanks for kind wishes.

IGNORAMUS.—We should certainly recommend you to obtain No. 4, which can be used with plates or roll-holder. Write to the makers, and ask them to send you pamphlet.

S. C. RUDMAN.—Provided you are careful, there is no danger with the ether saturator and cylinders. We prefer the cylinders and blow-through jet, and always use them ourselves. Have you read the articles on the lantern, now appearing in our columns?

S. P.—Your 7 by 5 lenses will not cover whole-plate without stopping down. The camera named will turn out satisfactory work. The back combination is the better to use; the position of stops really of no great importance. The focus being practically doubled, the exposure required will be four times that of the complete lens.

A. W. COOK.—Pyro Developer.

|                             |             |
|-----------------------------|-------------|
| (A) Pyrogallol .. .. .      | 437 5 gr.   |
| Metabisulphite of potash .. | 437 5 "     |
| Distilled water .. .. .     | up to 9 oz. |
| (B) Potassium bromide .. .. | 4 7 5 gr.   |
| Distilled water .. .. .     | up to 9 oz. |



- (C) Liq. ammonia '850 .. .. 1 fluid oz.  
Distilled water .. .. 9 " "
- Quinol Developer.
- (A) Quinol .. .. 437.5 gr.  
Sulphurous acid .. .. 1/2 oz.  
Methylated spirit .. up to 9 oz.
- (B) Potassium bromide .. .. 437.5 gr.  
Distilled water .. .. up to 9 oz.
- (C) Sodium hydrate .. .. 437.5 gr.  
Sodium sulphite .. .. 2 oz.  
Distilled water .. .. up to 9 oz.

If you use the acid fixing-bath there is no need for alum. Aristotype paper is not made in white. Obernetter, Jacoby's, Iford, or Celerotype are all as easy to manipulate as Aristotype. The discoloration of the toning solution is not harmful, and is due to a silver compound. A bayonet catch answers perfectly, and we have had some in use for years.

F. D. BARNETT.—If you use the acid fixing bath, alum is not necessary; otherwise its use is advisable after copious washing.

E. W. STURR.—Many thanks for notice of dark-room.

W. R. D.—Had you thought for a moment that the prints would have been severely criticised, probably you would have been more careful; but it is fair to yourself to send up a print done rather in a hurry? You pickled the rod yourself; we only applied. The print was stained, or possibly, we should say, there was a general fog, from hasty and careless development. We wish you better luck next time, and you will not be more pleased to take than we shall be to award you the silver medal.

F. O. G.—The plate proves that your lamp is quite safe. We should prefer the oil lamp.

V. B.—(1) Very fair, but quite contrasted enough. (2) Poor. (3) Your pillars are too white. (4) Fair. (5) Good. (6) Poor. (7) Poor. Stick to your landscape plates and pyro and potash, and avoid using too much pyro and bromide, which is the cause of your intensely hard contrasts in 3.

KI-NON.—Architecture is admissible, but not interiors. Print received safely.

INQUISITIO.—Chadwick, Lancaster, Underwood, Fallowfield, etc., all have stereoscopic cameras, but any square bellows half-plate camera may be adapted for this work at a nominal cost.

REV. F. PARTRIDGE.—The eucustic paste is the cause of your trouble. Had you omitted this it would have been alright. See letters this week. The print is up to standard, but printed too deep.

EXCELSIOR.—(1) The only fault is that a colour-sensitive plate should have been used, and you would have then obtained a better rendering of the lovely colours on the game. (2) The naturalistic school is characterised by no absolutely sharp definition anywhere; everything is thrown slightly out of focus and softened down. (3) A plane of focus may briefly be explained by supposing that you had placed a figure in the foreground of your "Loch Stach," and focussed this figure sharply and neglected the rest of the picture. The plane of focus would have been a line drawn through the figure parallel with the camera front, and the rest might have been out of focus.

NEDGO.—185 means 1 1/8% or 1 1/5 gr. There will be no difficulty in measuring this quantity if you keep your pyro in 10 per cent. solutions. If you want to weigh out dry pyro—assume 185 to be 1 1/4 gr.—to obtain this, weigh out 7 gr., dissolve in 1 dm. of water, and measure out 1/2 or 15 drops, which will be equal to 1 1/4 gr. dry pyro.

CAROL.—Purchase any square bellows half-plate camera and have it adapted for stereoscopic work. We do not quite see what the objection is, unless one is likely to include things in the half-plate which would not come into double quarter.

ALLIANCE.—Isoschromatic means literally equal coloured, but practically it means that the plates are so prepared as to reproduce more correctly in monochrome the yellows and yellowish greens, which on an ordinary plate are rendered nearly black. We think the developer would work, but would be very slow for plates, and is more suitable for bromide papers.

S. P. J.—We shall publish your sketch probably next week.

MRS. RICHARDSON.—(1) Printed far too deeply, and overtoned. (2) Overtoned, stains probably due to not changing the first washing waters quick enough—see article, p. 92, Feb. 5. (3) Slightly overtoned, the tint in the sky is caused by the action of light. (4) Same as No. 1. (5) Overtoned. (6) Negative wants intensifying; overtoned. (7) Overtoned. Read the above-named article, don't tone so deeply, and let us see some more work after this. To obtain matt-surface, squeeze down to matt-surface celluloid, or else rub the face of print when dry with pumice-stone. We return your fee: the lens was faultless, and we do not charge for an examination of that character. A view on Scotch burn would be admissible to competition.

NOXALL.—(1) Print under-exposed and too hard. (2) Toned too far, would give probably better bromide. (3) Ditto. (4) Over-exposed print or exposed too near the light, no pure whites in it. (5) Contrasts too great. (6) Bad, a great deal too black. The two mounted silver prints are weak and poor. Please send a list of hand-cameras, and stating your requirements, and we will then give you our opinion as to the one most likely to suit you.

G. HARROP.—We could not state whether the lens is a genuine one without examination, but Voigtlander is a German, and hardly likely to engrave his mounts with French words. It would be more satisfactory if you sent the lens to Marion and Co., 23, Soho Square, London, W., and asked their opinion on it; they are the English agents.

C. JONES.—It is always a difficult matter to remove silver stains. We should suggest soaking the negative in the acid fixing bath and rubbing gently with the finger.

C. H. BROWN.—Many thanks; we utilise elsewhere.

M. P.—(1) Good. (2) Wanting in life and clouds, and the foreground should have been sharp. (3) An inch too much foreground, and also wants life. (4) Water rather too white, printed too deep. (5) The snow is wanting in detail. (6) Ditto; probably you would get better results in bromide paper. With the improvements we suggest all are up to competition standard.

G. A. SAVAGE.—Marlow, Constitution Hill, Birmingham, a wholesale maker only.

POURTRAIT.—Obtain a single lens working at f/8, of 18 in. focus; this will do all you want. We could lend you an unmounted lens if you can use it temporarily to try.

H. J. L. J. M.—(1) The carbonate bath is the same as given in the "Dictionary." The borax formula in the same book is suitable. (2) We would suggest selling your camera and obtaining one of Chadwick's, or else getting a set of his Barnett-Chadwick single slides, which are very light. (3) The adapter works all right. (4) Nothing is added to paraffin but camphor. It is a case of careful purification and adjustment of height and state of wicks and the draught. We do not think B defects are due to hypo—though iron stains as a rule are characterised by a central spot or particle of iron, which is clearly distinguishable under a microscope. We can see no particle in your print. We shall hope to adhere strictly to alphabetical order for next Competition. We shall be glad to see your MSS., and always return the great rejected, but hope yours will join the minority, and appear in our columns.

C. J. H.—We do not know the maker of the lens referred to.

REV. F. PARTRIDGE.—We will extend time for you.

A. RUSSELL.—The only thing to do is to fix the mounted prints by the edges in a frame, so that they cannot curl. Uneven toning and mealy prints point to insufficient washing before toning.

IGNORAMUS.—We should certainly prefer the Universal with Ross R. S. lens.

A. SILVER.—No. 2 lens is certainly the better one and more suitable for your work.

HIBERNICUS.—(1) Prints mounted on opal are not eligible. Last year's entry forms may be used. (2) As your room faces west it would be advisable to arrange a curtain of red material inside, so as to form extra precaution when the sun shines. Ruby paper pasted on would be safe in ordinary diffused light, provided you did not work too near it. (3) Probably about 60 and 120 sec. respectively. (4) Orange paper would not allow you to see sufficiently; you must use glass. (5) Development must be carried further than with hydroquinone alone. (6) Halation would arise quite as much in working as you suggest as in the ordinary way. There would be a glass surface in front of the film to deflect and reflect the light.

CRUX.—(1 and 2) Neither of the cameras, so far as we know, fulfils the requirements you suggest. (3) If for stand work, you want something different to either.

TRIX.—Keep your prints in the toning bath till the print, on being held up to the light, shows no signs of red in the shadows. This will give you purple tones. If warmer tones are required, the red should not entirely disappear. A great deal depends upon the negative. Some will not give good tones anyhow. Always pleased to help you.

J. LINDSAY.—Two articles appeared in January 22nd and January 29th this year. Do you want dates of articles in back numbers? We hope to have some articles on the subject shortly.

W. T. BARTON.—We should classify 3, 4, and 7 equal, 1, 2, 5 and 9 next, and then 6 and 8. The higher-priced camera probably means a finer class of wood, polish and general finish, but as a practical instrument, the camera we previously mentioned is perfect.

GLASGOWENTIS.—(1) Over-exposed, developer too strong, and did not cover the paper evenly. (2) Developer did not cover evenly. (3) Same as No. 1. (4) Ditto. (5) Ditto. (6) Ditto. (7) Ditto. (8) Ditto. Your stains are caused probably by dirty hypo. Had you used it for fixing plates or ferrous oxalate or pyro-developed negatives?

## Monthly Competition.

No. 33, SEA PIECES AND RIVER SCENERY.

PRINTS have been received from:—

T. H. Redwood .. .. Chingford  
G. Austin .. .. Anerley  
Thomas Barton .. .. Clapham, S.W.  
W. Pollard .. .. Canterbury  
E. L. Marriott .. .. Liverpool

A. J. Powell .. .. St. John's Wood  
J. Williamson .. .. Brighton  
G. A. Savage .. .. Folkestone  
W. Tinsworth .. .. Staffs.  
C. Cramer .. .. Kent  
F. W. Meadway .. .. London  
C. E. Wittaker .. .. Thornton Heath  
E. F. Duff .. .. London  
H. N. Rudge .. .. London  
A. Goodwin .. .. London  
R. Hurrell .. .. London  
G. R. Bejeman .. .. London  
O. E. Challis .. .. London  
A. L. Spiller .. .. Plympton  
Simons G. Soltan .. .. Keswick  
R. D. Storey .. .. Wolverhampton  
J. W. Evans .. .. Salisbury  
G. White .. .. Liverpool  
A. Evans .. .. Liverpool  
W. G. Henderson .. .. Liverpool  
T. A. Cunningham .. .. Greenock, N.B.  
J. Waters .. .. Keighley  
J. Harriman .. .. Henley  
E. V. Ives .. .. Isle of Man  
Thos. McPhee .. .. Nottingham  
J. T. Richardson .. .. London  
G. P. Green .. .. Liverpool  
W. L. Ellsworth .. .. Worthing  
J. G. Potter .. .. Waterford  
E. P. Bolton .. .. Pau  
M. Acton .. .. Edinburgh  
E. M. Horsburgh .. ..  
C. I. Cave .. .. Liverpool  
H. W. V. Wilson .. .. Manchester  
E. H. Chapman .. .. Surrey  
G. M. Ramsey .. .. Hexham  
J. Gibson .. .. Clifton  
H. Belfield .. .. St. Andrews  
E. J. Jackson .. .. Cheshire  
Mrs. S. E. Gaddum .. .. Manchester  
S. Diggle .. .. Tunbridge Wells  
J. M. Bottomley .. .. Cumberland  
T. J. Storey .. .. Newcastle-on-Tyne  
G. L. Snowball .. .. Cardiff  
C. F. Gooch .. .. Isle of Man  
E. H. Harrison .. .. Jersey  
A. F. W. Francke .. .. Portsmouth  
A. Fogwell .. .. Yorks  
A. S. Dean .. .. Manchester  
R. Hyde .. .. Ashton-under-Lyne  
R. Deakin .. .. Shrewsbury  
Wallace Heath .. .. Birkenhead  
G. A. Carruthers .. .. Todmorden  
J. W. Measures .. .. Gledesdon  
J. Liffen .. .. Windsor  
A. C. D'Albertanson .. .. Liverpool  
J. Howettbaveali .. .. Norwich  
F. W. Spalding .. .. Surrey  
E. Clark .. .. Shepherd's Bush, W.  
J. Stein .. .. Bactup  
W. H. Cooper .. .. Cambridge  
P. R. Salmon .. .. Surrey  
T. Clarke .. .. London  
A. H. Lyons .. .. Kent  
W. J. E. Clarke .. .. Hunts.  
E. W. Male .. .. Hampstead  
F. A. M. Flegg .. .. London  
Florence Bowles .. .. Reading  
J. A. Booth .. .. Eaton Square  
E. Broughton .. .. Bristol  
H. J. B. Davis .. .. France  
E. Annesley .. .. Stratford  
A. Scott .. .. Manchester  
S. J. Bradburn .. .. Scotland  
M. McMillan .. .. Bournemouth  
F. E. W. Bowan .. .. Elgin  
G. Pirie .. .. Haywards Heath  
R. C. MacLeod .. .. Bishop Auckland  
H. T. Lovejoy .. .. Stockton-on-Tees  
S. Stamp .. .. Plymouth  
C. J. Harris .. .. Bishop Auckland  
R. N. Clark .. .. Reading  
C. Stephens .. .. Paris  
M. Ollechett .. .. Edinburgh  
F. Leslie .. .. Shepherd's Bush, W.  
C. F. H. Hallett .. .. Clapham S.W.  
F. R. Bale .. .. Kendal  
A. M. Wilson .. .. Barnsbury N.  
D. R. Williams .. .. Bradford  
H. S. Smith .. .. Manchester  
R. H. Thompson .. .. Nr. Huddersfield  
J. R. Hogley .. .. Midlothian  
W. L. Tod .. .. Sheffield  
G. Coulson .. .. Bow, E.  
H. Everett .. .. Glasgow  
T. Dowling .. .. Newcastle-on-Tyne  
A. Rhagg .. .. Glasgow  
A. M. Ogilvie .. .. Sheffield  
G. H. Westlake .. .. Sheffield  
J. W. P. Norton .. .. Devon  
E. F. Denison .. .. Manchester  
T. Odgen .. .. Putney, London  
Chas. Ballard .. .. London  
Wm. Pringle .. .. Blackburn  
W. H. Bibby .. .. Rochdale  
C. R. Beaumont .. .. Devon  
H. Rendal .. .. Longdale  
J. N. Williams .. .. Longdale  
G. F. Wilson .. .. Longdale  
Miss J. Niblott .. .. Ledbury



|                            |    |                             |
|----------------------------|----|-----------------------------|
| J. W. Sutherland           | .. | Newcastle-on-Tyne           |
| E. H. Seamer               | .. | Bury St. Edmunds            |
| W. T. Tucker               | .. | ..                          |
| E. Griffiths               | .. | St. Columb                  |
| G. R. Ashley               | .. | N. Wales                    |
| G. J. Jones                | .. | Malton                      |
| W. T. Reid                 | .. | Sarborough                  |
| J. H. Brown                | .. | Warrington                  |
| R. L. Kingsreid            | .. | Cambridge                   |
| A. James                   | .. | S. Wales                    |
| F. H. Stacy                | .. | Sheffield                   |
| F. E. Butcher              | .. | Blackheath                  |
| A. Ferguson                | .. | Islay                       |
| W. S. Ilaves               | .. | Aberdeen                    |
| J. H. Godding              | .. | Newbury                     |
| G. E. Bennett              | .. | Bartholomew Square, E.C.    |
| Alex. Galloway             | .. | Aberfeldy, N.B.             |
| E. Dillan                  | .. | Oxfordshire                 |
| Grasekirk                  | .. | Liverpool                   |
| E. D'Auban                 | .. | 36, Ridgmount Gardens, W.C. |
| S. Dean                    | .. | Huddersfield                |
| John McMurdo               | .. | Bellshiel, N.B.             |
| J. Williams                | .. | Kent                        |
| R. H. Dutton               | .. | Crewe                       |
| E. G. Bain                 | .. | Florence, Italy             |
| W. S. Anderson             | .. | Edinburgh                   |
| Miss M. Watson             | .. | Florence                    |
| Miss E. M. Williams        | .. | Ealing, W.                  |
| J. C. Johnson              | .. | Gravesend                   |
| J. E. Pim                  | .. | Belfast                     |
| G. Woods                   | .. | Hastings                    |
| H. W. Campbell             | .. | Glasgow                     |
| W. K. Hutton               | .. | Kilwinning                  |
| W. A. Fuller               | .. | Upper Norwood               |
| H. T. Crowley              | .. | Sheffield                   |
| G. Riley                   | .. | Handsworth                  |
| E. Nicol                   | .. | Perth, N.B.                 |
| W. B. Pearce               | .. | Widnesbury                  |
| J. W. Crozier              | .. | Hexham                      |
| S. G. Geckir               | .. | Angus                       |
| P. J. Cooper               | .. | Darlington                  |
| James Drew                 | .. | Sodbury                     |
| G. F. Ross                 | .. | Slidmouth                   |
| C. F. L. Barnwell          | .. | Staffs.                     |
| H. Clemence                | .. | Chiswick, W.                |
| A. J. Hardwick             | .. | Taunton                     |
| T. J. Marshall             | .. | Richmond                    |
| H. N. Popham               | .. | South Shields               |
| A. H. Rudge                | .. | Wolverhampton               |
| Lieut.-Col. J. C. Worthing | .. | Argyllshire, N.B.           |
| Hubert Nye                 | .. | Clapham Rise, S.W.          |
| J. Smith                   | .. | Newark, Notts.              |
| Alex. Greekio              | .. | Angus                       |
| C. W. Townshend            | .. | Bassett                     |
| G. Mackie                  | .. | Brechin, N.B.               |
| G. H. Saich                | .. | Waterford                   |
| D. A. Wright               | .. | Devon                       |
| C. H. Hinde                | .. | Southport                   |
| Miss C. Fawcett            | .. | Wales                       |
| H. Burr                    | .. | Brixton                     |
| W. Moat                    | .. | Staffordshire               |
| W. A. Beedie               | .. | Aberdeen                    |
| R. C. White                | .. | Lanely                      |
| J. Myers                   | .. | Keighley                    |
| P. McGregor                | .. | Aberfeldy                   |
| A. J. Champness            | .. | Sydenham Hill, S.E.         |
| M. S. Bryant               | .. | 66, Breakspere Rd.          |
| A. J. Bridges              | .. | Kings Lynn                  |
| H. E. Arrowsmith           | .. | Sussex                      |
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| F. E. McNair               | .. | Ayrshire                    |
| F. Partridge               | .. | Cornwall                    |
| G. Lewis                   | .. | Tunbridge Wells             |
| Miss C. R. Langton         | .. | Liverpool                   |
| H. A. Blalle               | .. | Windsor                     |
| Miss C. T. Frere           | .. | Norwich                     |
| E. F. C. Trench            | .. | Ireland                     |
| Chas. Smallridge           | .. | Devon                       |
| C. V. Davies               | .. | Milford Haven               |
| F. P. Banks                | .. | Norwich                     |
| A. Evans                   | .. | Liverpool                   |
| J. Parker                  | .. | Hereford                    |
| B. Brandreth               | .. | Hoylake                     |
| E. Masno                   | .. | Yorks                       |
| H. S. W. Eyre              | .. | Sussex                      |
| F. B. Featherstonehough    | .. | Ireland                     |
| F. Young                   | .. | Isle of Wight               |
| Viscount Maitland          | .. | Lander, N.B.                |
| H. Shimwell                | .. | Birmingham                  |

## Sale and Exchange.

**Cameras, Lenses, etc.**—Aptus Universal, quarter-plate, all movements, lens f/5.6; approval; cash.—No. 243, care of AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C.

Whole-plate camera, mahogany, three double and one single slide, with carriers, one of Ross's portrait lens; all in good order; will sacrifice for £12 10s.—T. Usher, Melbourne Terrace, Holywell, Backworth, Newcastle-on-Tyne.

5 by 4 bellows camera, lens, and double slide; well made; 21s.—Apply to N. AMATEUR PHOTOGRAPHER office, 1, Creed Lane, London.

Half-plate folding camera, long extension, seven Tylar's double dark-slides, half-plate R.R. lens, with stops, in case; offers wanted, or exchange for Facile or

Radial hand-camera.—No. 247, office of this paper, 1, Creed Lane, E.C.

**Hand-Cameras, etc.**—Optimus hand-camera, brass-bound, can also be used on stand as ordinary camera; cost £10 10s.; focussing screen, six double backs, fitted with Optimus landscape and Taylor and Hobson's hand-camera lens, iris diaphragm, new last year; in good condition; price £7 15s.; lens cost £5 2s.—Frederick Holmes, French Embassy, Albert Gate, London.

Facile hand-camera, stops, and 5 by 4 lens, in case; used once; cost £6; take £4.—A. Rose, White Hall, Bournemouth.

Underwood's Sphinx hand-camera for sale, carries 12 plates, has two finders, two shutters, lens working at f/6, covered morocco, nearly new, £3; approval; deposit.—No. 244, office of this paper, 1, Creed Lane, E.C.

Kodak No. 1, excellent condition, sling case, 40 films, £2.—Dawkins, 55, Bunhill Row, E.C.

Stereoscopic hand-camera by Rouch, Eureka model, iris diaphragms, and latest improvements, quite new, £10; cost £14.—Cornish, 45, Brompton Square, S.W.

No. 2 Kodak camera, contains 100 exposures, transparent film, leather case, and almost new; sent on approval if desired; price £5.—No. 246, office of this paper, 1, Creed Lane, E.C.

Rouch's quarter-plate Eureka hand-camera, new last summer, price £3 15s.; Suter's No. 3B whole-plate rapid rectilinear, good condition, £2 15s.—W. Clare, Sydney House, Malvern Wells.

**Lenses, etc.**—For sale, Optimus 5 by 4 R.R. lens, three stops, 21s.; also 3-fold tripod stand and triangle, 15s.; also brown canvas case for quarter-plate camera, lined baize, 10s.—Hebeler, Western Road, Romford.

Dallmeyer's half-plate rectilinear landscape lens, with iris diaphragm, price £3 10s.; quite new.—Gleu-cross, Luxstowe, Liskeard, Cornwall.

Suter C3 lens, with iris, 9 in. focus, cover 12 by 10 plate, in leather case; new a few months ago; cost £6 3s. 6d.; will take £4 10s.—J. Bulbeck, Havant.

Dallmeyer's 6 by 5 R.R. lens, 88s.; Dallmeyer's 1 A.A. wide-angle R. lens, 70s.; both in new condition; Fumphy's telescopic camera stand, 12s. 6d.—Walker, 87, Union Terrace, York.

Offers wanted for Grubb's cabinet portrait lens, B3, with stops in case, cost £13; Grubb's quarter plate landscape lens; approval, if desired.—No. 248, office of this paper, 1, Creed Lane, E.C.

**Negatives.**—Fifty very fine lantern slide negatives of Palestine, particularly Jerusalem, chiefly from photographs by a French artist, price 3d. each; list on application.—Craig, Dalgety, Aberdeen, Fifeshire.

Six instantaneous portraits of children by deceased professional, 40 years' experience, 1s. 3d.; also grooved boxes, with 50 assorted negatives, 5s. each.—Richford, Wells, Norfolk.

**Sets.**—In excellent condition and repair, Underwood's Instanto camera quarter-plate and four dark slides, powerful French rapid rectilinear lens, Thornton-Pickard time and instantaneous shutter, rigid two-fold tripod, and camera case, £3 15s.; also Newman's shutter, 12s., cost 25s.; and Lancaster's quarter-plate enlarging lantern, £1 5s. Owner selling for no fault whatever, but is about to purchase a larger-sized kit. Apparatus may be seen by appointment.—W. A. Everington, Merton House, Dulwich Wood Park, Norwood.

For sale, price £6, nearly new photographic apparatus, consisting of Werge's portable camera, three double backs in leather sling case, complete with tripod, and Ross' rapid symmetrical lens for plates, 4½ by 3½ (the best lens for outdoor photography), pneumatic instantaneous shutter, printing frames, ebonite dishes, cutter, shaping glasses, squeegee, etc.—Apply, F. E. G. B., 2, Bridlington Villas, Hainault Road, Leytonstone.

Lancaster's Meritote quarter set, complete, extra dark slide, and 5 by 4 lens, also drop shutter. Offers?—E. Ives, Henley.

A gentleman has a half-plate camera, with stand, two lenses, instantaneous shutter, six double backs, dry plates, chemicals, and every requisite for amateur work, for sale, £12.—Apply for full particulars, H., care of C. E. Cooke, stationer, Richmond, Yorks.

A bargain, half-plate Palatine camera, adjustable back and front; three double dark slides; Taylor's R.R. lens, 8 by 5, with iris diaphragm; level; also fitted with Eastman roll-holder for 24 exposures; four-fold tripod stand, with patent head, in "Perfect" case; in first class order, only used last season; cost £15; will take £12.—Address 1. K., Visitor office, 23, Tulketh Street, Southport.

Half-plate best mahogany brass-bound square bellows camera by Ross, London, fitted with three Tylar's double metal dark slides, £3 10s., cost £11; Ross U.S. (extra-rapid, new series) lens, 10½ in. focus, 8½ by 6½ hood, 2½ in. iris diaphragm, £8 10s., cost £10 12s. 6d.; Thornton-Pickard time and instantaneous shutter, with new speed indicator for above lens, 25s., cost 32s.; two-fold ash tripod, 18s., cost 26s.; best solid leather case for camera, slides, lens, etc., with lock, 25s., cost 37s. 6d.; all the above equal new and bargains; lot, £17 10s.; approval.—Apply, Barton, Morriston, Elgin, Scotland.

15 by 12 camera, Stereoscopic Company's best make, hardly used, very complete outfit, three double slides, iris lens, good pneumatic shutter, etc.—No. 245, office of this paper, 1, Creed Lane, E.C.

Perken, Son, and Rayment's whole-plate camera, three double dark slides, all latest improvements, rapid rectilinear lens, Optimus patent plunge shutter, com-

bined focussing glass and view finder, telescopic ash stand, waterproof camera case, and velvet cloth; all quite new; price £16; can be seen any evening by appointment.—Ravenscourt, Holly Park, Crouch Hill.

**Shutter.**—Wanted, offers in money or photographic materials for a Grinston shutter to work in diaphragm slot of Ross' R.S. whole-plate lens; in working order from maker; no approval, as persons unaccustomed to its working may do damage.—F. Hoare, Cirencester.

**Sundries.**—What offers for flash-lamp, with india-rubber tube and reflector? To be seen at the office of this paper.—Mac, office of this paper, 1, Creed Lane, E.C.

Exchange 108 "Cycling News," 51 "Cycling," 73 "Wheeling," all as new, for anything photographic.—Address 12, Highbury Park, N.

For exchange, over 1,000 pieces of best metal type (different sized letters and figures), with points for same; the whole is in first class condition; will give for a battery and coil, an air gun, or anything useful. What offers?—Address, Alex. Rodger, 214, Paisley Road West, Glasgow.

Safety Bicycle, "Special Arrow," ball bearings all parts, including pedals, machinist cushion tyre, plated parts, in perfect condition; lamp, and all accessories; price £8 10s.; originally cost £15.—Baker, Warwick House, 2, Acre Lane, Brixton, S.W.

Whole-plate portrait lens by Deroeye, exquisite definition, £3; Abraham's studio shutter, 10s.; extra large grass mat, new, 10s.; rustic wall, £1; two rustic rocks, 10s.; rolling press, hot and cold, take 12 by 10, £2; large plate glass show case, 5 ft. by 3½, £1 10s., new; all nearly new.—James Cawwood, 23, Mansfield Road, Nottingham.

Lancaster's half-plate Instantograph, three double wood slides, tripod, waterproof canvas case, developing dishes, printing frames, plate and paper boxes, bottles, ruby lamp, mounts, etc.; in new condition, 85s.—Norman, 18, Bassett Street, Kentish Town, London.

Presto hand-camera, three slides, view finder, 8s., cost 16s.; rebounding shutter, 3 in. diameter, 3s., cost 10s.; Tylar's focussing chamber, half-plate, instead of black cloth, 2s.; the three, 12s.—Miss Cox, 4, Strathearn Place, Edinburgh.

Seven volumes (6 to 12) AMATEUR PHOTOGRAPHER, clean, own cases, 40s.; or exchange for Davenport in good condition.—F. H., 4, Knatchbull Road, Camberwell.

Half-plate apparatus, and several sundries, cheap; list sent.—H. Benson, 65, Elgin Avenue, Paddington. 40 ft. steel oxygen cylinder (Clarkson), with key, screw, and nipple, cost £3 12s. 6d.; also gun metal coupler to fill any smaller cylinder from it, cost 5s.; perfect; used only one season, only once refilled; price 55s. Lantern screen, good sheeting, 15 ft. square, tapes, loops, and bag, well made, strong, very little used, 15s.; pole frame for screen, with massive feet and iron sockets, easily set up, will extend to 20 by 16 ft. or any less size, stained wood, exceedingly strong, cost 45s., take 32s. 6d.; approval; deposit; purchasers pay carriage.—Kerry, Kingston Road, Oxford (Vice-President, Photographic Society).

AMATEUR PHOTOGRAPHER, complete to date, clean, and perfect, 30s., or exchange for hand-camera, cabinet portrait lens and camera, or what offers?—Artist, 3, Walpole Street, Wolverhampton.

## WANTED.

**Cameras, etc.**—Underwood's quarter-plate Instanto; will give good exchange.—S. Hawkins, Belper.

Wanted, quarter-plate camera, complete, cheap.—F. Page, 31, Harvist Road, Holloway.

**Hand-Cameras, etc.**—Wanted, hand-camera, Ideal, Facile, Talmer, or Optimus magazine.—Sone, 4, Douglas Street, Derby.

Wanted, hand-camera, quarter-plate size, Kodak, or any good maker; no cards or callers.—T. C. Hosking, 1, Baldwin Crescent, Camberwell.

Demon No. 2, perfect condition, with working instructions; state lowest cash price (including carriage); no postcards.—Geo. Tipper, Grimston, King's Lynn.

**Lenses, etc.**—Wanted, good half-plate portrait lens; also half-plate R.R., and Rouch's quarter or 5 by 4 detective, complete; state lowest price to Wilkie, Cork.

Wanted, half-plate rectilinear lens in exchange for very good violin, bow, and case.—Twemlow, Wesley Cottage, Sandbach.

Wanted, W.A. rectilinear half-plate; state make and price; approval; deposit.—Dr. Liebsenstein, Hartford, Cheshire.

Wanted, half-plate wide-angle rectilinear, good maker, cheap. Particulars to H., 52, Shepherd's Bush Road, W.

Wanted, a pair of Dallmeyer's stereographic lenses; state lowest price.—Robert Gunn, 45, West End Park Street, Glasgow.

Wanted, lens and shutter to suit Sands and Hunter's 5 by 4 camera; must be good condition and cheap; approval.—Herbert, Blackrock, Dublin.

**Sundries.**—Wanted, walking-stick tripod for hand-camera.—P. Martin, 9, Alwal Road, Wandsworth, S.W.

Wanted, AMATEUR PHOTOGRAPHER for 1891, clean, must be cheap.—Herbert, Blackrock, Dublin.

Wanted, "British Journal," "Photographic News," and "Photography" from January, 1891, to present date.—Write to "1893," office of this paper, 1, Creed Lane, E.C.



# The AMATEUR PHOTOGRAPHER

Telephone N<sup>o</sup> 1645  
Telegraphic Address: VINEY, LONDON

Office: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 387. VOL. XV.]

FRIDAY, MARCH 4, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.*

**OUR VIEWS.**—Ashton-under-Lyne Exhibition—Stereo. Competition—Ladies' Competition—Exchange Postal Negative Club—Society for Eastbourne—Camera Club Conference Programme—Free Portrait Association.

**LEADER.**—Notes on Enlarging.

**QUARTERLY EXAMINATIONS IN PHOTOGRAPHY.**

**EXHIBITIONS.**—Rotherham Phot. Soc.—Colchester Camera Club—Paisley Phot. Soc.—Ashton-under-Lyne Phot. Soc.

**LETTERS.**—Photographic Society, City of London College (W. Blizard)—The Actinograph (S. E. K.)

**ARTICLES.**—Photographic Procedure (Wall)—Elementary Photography (Hodges)—Legal Side of Photography (J. W. Brown)—The Lantern, and How to Use it (C. G. Norton)—National Society of Lanternists—"Open, Sesame" of Successful Photography (H. Maclean)—Study and Practice of Art in Field Photography (A. Horsley Hinton)—Lenses (Jos. Chamberlain).

**SOCIETIES' MEETINGS.**—Aberdeenshire—Barrow—Camera Club—Canterbury—Coventry—Croydon—Cornish—Devon and Cornwall—Dewsbury—East London—Edinburgh—Glasgow High School—Hackney—High Barnet (Elizabethan)—Huddersfield—Ireland—Leith—Liverpool—Louth—Munster—Newcastle-on-Tyne—Putney—Richmond—Sheffield Optical—Shropshire—Sunderland—Sydenham—W. Kent—W. London—Wigan.

**REVIEWS.**—Instructions for Using Hurter and Driffield's Actinograph (Marion).

**CATALOGUES.**—W. C. Hughes—Cyclopædia of Brass-work, etc. (Lonsdale)—London Stereo. Co.

**APPARATUS.**—Zeiss' Photographic Lenses.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All Communications should reach the Editor by Tuesday.)

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE and EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, and VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (SALE and EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.)

**"Amateur Photographer" Monthly Competition No. 34.**—"PORTRAITURE AND FIGURE STUDY." Latest day, March 21st.—Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, April 15th.)

**"Amateur Photographer" Ladies' Third Competition.**—"LANDSCAPE OR SEASCAPE—LANDSCAPE WITH FIGURE—PORTRAITURE OR FIGURE STUDY." Latest day, March 31st. Prizes: Gold, Silver, and Bronze Medals, and Certificate. Not more than eight nor less than six mounted prints to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C.

IN the report of the Ashton-under-Lyne Exhibition our correspondent kindly says, with regard to the "Holidays with the Camera" Prize Pictures, which were lent for the occasion, "The pictures by the members of the Ashton Society are regarded as equal in merit to anything shown in this part of the Exhibition." We do not wish to puff our Prize Pictures, but we can only state that as the very best of each prize set sent in to our competition have been retained for the purposes of reproduction, the above cannot be allowed to pass without comment, and we may also point out that whereas the society's exhibit is practically the pick of years, our competition prints must be those prints obtained in one holiday only, and it is far easier to turn out one or two good pictures a year than to turn out a good set, such as we require for our competition.

MR. J. E. ELLAM, of Yarm, has been awarded an extra First Certificate for excellence in his slides sent to our Stereoscopic Competition.

WE would draw the attention of our lady readers to our Third Ladies' Competition, which closes on the 31st inst. The subjects are "Landscape or Seascape—Landscape with Figure—Portraiture or Figure Study." The pictures and negatives must be the unaided handiwork of the competitor; the selection of subject, exposure, development, retouching (if any), printing, toning, and all other operations, except mounting, must be performed by the operator, and no picture is eligible which has received an award at any previous competition or exhibition. The prints sent in to this competition will be judged by two gentlemen of good standing in the photographic world, and the prizes will be announced and some of the pictures reproduced and all criticised in one of the issues of the AMATEUR PHOTOGRAPHER in May.

MR. G. F. GREGOR GRANT, of The Tower House, Bexley Heath, requests us to draw the attention of our readers to the fact that he has still some vacancies in the "Exchange" Postal Negative Club, which he is desirous of filling with new members, from either Scotland, Ireland, or North England. The club is for quarter-plates only. Should any of our readers like to join, he will be very pleased to answer all inquiries.



It is proposed to form a society for Eastbourne, and with that object in view a public meeting will be held in the Naturalistic Society's Rooms, in that town, on the evening of Wednesday, March 9th, at eight o'clock, when all photographers residing in the neighbourhood are requested to attend and assist.



MR. GEO. DAVISON, Hon. Secretary of the Camera Club, sends us the following complete programme for the Conference to be held this month at the Society of Arts:—

Tuesday, March 22nd. Conference at the Society of Arts, 18, John Street, Adelphi, to be opened by the President at 3 p.m. Papers to be read from 3 p.m. to 6 p.m. in the Theatre.

3 p.m. Opening by the President.

Mr. C. H. Bothamley: "Some Points in Connection with Development."

About 3.45 p.m. Mr. Leon Warnerke: "On Chemigraphic Etching."

About 4.30 p.m. Mr. A. Pringle: "Photography Applied to Medical Research."

About 5.15 p.m. Mr. W. Willis: "Recent Improvements in Platinotype."

Renewal of Conference at 8 p.m.

8 p.m. "Symposium on Artificial Lighting in Photography."

Mr. Van der Weyde: "Demonstration of Use of Electric Light for Portrait Effects." Mr. E. J. Humphrey: "Oxy-magnesium Lamps for Printing and Lighting."

9.15 p.m. Mr. H. E. Armstrong, F.R.S.: "Theory of Development."

Wednesday, March 23rd, 3 p.m.—Renewal of Conference in the Theatre, Society of Arts. Papers to be read from 3 p.m. to 6 p.m.

3 p.m. Mr. Henry Blackburn, Editor of *Academy Notes*: "The Debt of Art to Photography."

About 3.45 p.m. Mr. H. Stanus, F.R.I.B.A.: "The Uses of Photography to the Decorative Artist."

About 4.30 p.m. Mr. H. P. Robinson: "Paradoxes of Art, Science, and Photography."

About 5.15 p.m. Captain Abney: "Some Uses of Celluloid Films."

7.30 p.m. Annual Club dinner for members and friends at the Monaco Restaurant.

Thursday, March 24th, 8 p.m. Exhibition of lantern slides in the Theatre. Special tickets for this exhibition.

The annual exhibition of photographs by members will be on view at the Club, Charing Cross Road, from 10 a.m. to 4 p.m. Admission by card from any member of the Club, or by ticket from the Hon. Secretary. The exhibition will be open under these conditions for about six weeks from Tuesday, March 22nd.

All photographers are cordially invited to take part in the Conference.

The meetings at the Society of Arts are open to ladies.



WITH reference to the free portrait association about which some correspondence has taken place in our columns, the victim who first directed our attention to it writes to state that the association now offers to frame his portrait for 10s. 6d., but, unfortunately for the association, he does not seem inclined to invest even this amount. The superintendent of the local police who called upon us gave us the whole history of the people who are running this business. We hardly think it worth while to recapitulate, but it is by no means creditable or satisfactory. The circular is so worded that criminal process is not possible; the only remedy seemed to be the County Court, and our advice is to let the thing alone altogether. If any of our readers are curious as to how these associations are worked, a reference to the file of *Truth* will at once satisfy them that loss and trouble is the only thing to be got out of it.



**Sydenham.**—On 23rd ult. the members of the Club gave an exhibition of prize slides, the hall being lent for the occasion by the Penge and Upper Norwood Constitutional Club. The limelight and lantern were in the hands of Mr. S. C. Chapman. Mr. Cole (the President) explained the slides, after a short introductory address.

## NOTES ON ENLARGING.

"THE future of photography rests in the practical solution of the amplification of small photographic images. In fact, with the optical means actually at our disposal, we can produce with certainty a small proof—the size of a card picture, for example—of absolute sharpness, both at the centre and margins. If we effect the enlargement of this proof with a perfect apparatus, we shall obtain from it a proof of plate size, double plate, entire sheet, and of even one metre high, with an extreme perfection, such, that any objective, employed directly, cannot produce one either so beautiful or so fine." Thus writes Monckhoven in his "Photographic Optics," book ii., p. 155, and whilst we may not quite agree with him *in toto*, yet at the present time, when small cameras, such as the hand or portable cameras, are so much in use, there is not the slightest doubt that enlarging has received more attention than at any previous time in the history of photography, and therefore a few practical notes on this subject may induce many to take up this one of the most fascinating of all branches of photography, and which enables us to obtain results more permanent than the ordinary silver print, as with a little experience and care the operator may produce, not only enlarged prints direct, but obviously enlarged positives or negatives, from which prints in carbon, platinotype, and other permanent processes may be easily prepared.

Some, no doubt, may cavil, and suggest that we might treat of the theoretical questions involved in the use of the condenser, heliostat, and other processes, such as collodion transfers, etc.; but we shall endeavour to make these notes which we shall continue, a practical guide to enlarging for the average worker who cares little for theory, and wants to know why his results are poor or failures, and for that large class of devotees of photography, the amateurs who use commercially prepared bromide paper for obtaining enlarged prints of their snap-shots, the work of their hand-cameras.

### THE NEGATIVE.

It is a grave question as to whether there is one class of negative more suitable than another for making enlargements; some workers will say that an enlargement may be made from any negative, others again maintain that there is a particular class of negative especially suitable for this purpose, and personally we agree with the latter opinion. The most suitable negative is one with plenty of detail both in the high lights and shadows, without extreme contrasts, no bare glass, and yet without too great density; just such a negative as a professional printer considers perfect for silver work, and as usually produced by a good professional portrait photographer. Still, enlargements may be made from almost any negative, whether on glass, paper, film, or celluloid, and a good worker will produce good results with one and all.

Absolute sharpness is a *sine qua non*, and therefore negatives produced with comparatively short-focus lenses give the finest results, as there is greater depth of focus, and usually greater microscopic sharpness, than with negatives produced with long-focus lenses.

Preparatory to using any negative for enlarging, it should be carefully examined to see whether any existing defects may not be remedied; for this purpose it is advisable, if the operator is in possession of a retouching desk, to place the negative on the desk, and examine for any pinholes, scratches, or other mechanical defects which can be stopped out by means of the pencil in the ordinary manner, or else by the aid of a spotting-out brush and some non-actinic water colour. A good colour is made by mixing a little carmine lake and Indian ink or burnt sienna with gum water, which is a thin, aqueous solution of gum arabic; and, using the



point of the fine spotting brush, just touch out the open defects, allowing the spot to dry before a second touch is applied, when this is necessary. If an otherwise suitable negative has a patch of bare glass totally or almost devoid of detail, it is advisable to charge a camel's hair brush with some matt varnish, to which some soluble non-actinic dye has been added. A convenient solution can thus be made. Dissolve :—

|              |    |    |    |            |
|--------------|----|----|----|------------|
| Gum sandarac | .. | .. | .. | 7 parts.   |
| Gamboge      | .. | .. | .. | 1 part.    |
| In ether     | .. | .. | .. | 100 parts. |

and add—

|               |    |    |    |          |
|---------------|----|----|----|----------|
| Canada balsam | .. | .. | .. | 4 parts. |
| Benzole       | .. | .. | .. | 100 "    |

The back or glass side of the negative should be painted with a camel's hair brush, charged with this varnish, over the bare glass places. Or if a negative possesses dense high lights and weak shadows, as is often the case with portraits, the whole of the back of the negative may be varnished with this solution, and when the film is dry, the varnish carefully wiped off from the dense lights by the aid of a rather fine stump, made out of a piece of a penholder, the end of which can be covered with a piece of fine linen, which should be moistened with methylated spirit to remove the varnish.

Finally, before using a negative see that the film is free from dust, and that the back is absolutely clean, and cover up the clear glass left by the rebate of the dark slide either with some non-actinic paper or else tin-foil: the latter we generally use. The reason of doing this is to prevent halation or spreading of the action of light into the body of the picture, the light penetrating through these clear glass edges being so much more brilliant than that transmitted through the image; and we have frequently been obliged to trim off half an inch from the margins of our print because of this lateral spreading action of light.

**Kimberley Exhibition.**—The shipping companies have decided to assist the Exhibition in every way. Messrs. Divine Gates, of Cape Town, are appointed the official agents at Cape Town, and will only be too pleased to help all exhibitors and visitors to the Exhibition. Messrs. Rodwell and Co., of Port Elizabeth, are the official agents at that town, and will forward all exhibits on by train, making a small charge, and also the dock charges. The Exhibition buildings will be situated in the Botanic Gardens. The main buildings will cover 50,000 square feet, and there will be a gallery which, in Africa, will be a novelty. The building has one main avenue, and off this four separate wings, to contain the British, Continental, Canadian, American, and Fine Art sections. It is not yet decided what the building will be built of, but probably it will consist of wood and iron, and special arrangements will be made to protect the Fine Art Sections. It has been decided not to use glass for the skylight, but "Durolite" from the New Wire Wove Roofing Company. The Exhibition will be opened on September 1st, and remain open for above three months. The committee reserve to themselves the right to extend or shorten the period during which the Exhibition shall remain open. All the larger exhibits, or such as require special fittings, must be delivered not earlier than the 15th of July, nor later than the 15th of August, and must be accompanied by attendants qualified to place them in position, unless special arrangements are made. Smaller exhibits can be delivered after that date, but not later than the 25th of August, 1892. All must be arranged and ready for exhibition before the 1st of September. Exhibits proffered after these dates may be received, but no guarantee is given that they will either be catalogued or submitted to the jurors. The charge for space will be as follows:—For floor space (other than machinery in motion) not exceeding 25 square feet, 5s. per square foot; for floor space exceeding 25, not exceeding 50 square feet, 4s. per square foot; for floor space exceeding 50, not exceeding 100 square feet, 3s. 6d. per square foot; for floor space exceeding 100, not exceeding 200 square feet, 3s. per square foot; for wall space, half the above rates; for outside space for sheds, 2s. per square foot. All information can be had at the Agent-General's (Sir Charles Mills) offices, 112, Victoria Street; or at the exhibition offices, 3 and 4, Fenchurch Street, London.

## Letters to the Editor.

### THE PHOTOGRAPHIC SOCIETY AT THE CITY OF LONDON COLLEGE.

SIR,—The preliminary meeting of the above was held on 24th February, at which it was decided to form a photographic section of the Science Society already existing at the College.

The subscription is only 5s., which includes membership of the two societies and also the free postage each month during the session—October to June inclusive—of the Society's journal. The first photographic meeting will be held on the last Wednesday, the 30th of March, at 7 o'clock, but at the next ordinary meeting of the Science Society on Friday, 11th March, at 7 p.m., any intending photographic members will be cordially welcomed. Upon that occasion a paper will be read entitled "Printing Machinery," by Mr. W. Boutall, and at the photographic meeting the chief business will consist of examining any prints or apparatus which all members are asked to bring with them. Names of any intending members may be sent either to Mr. G. H. Powell, the Hon. Sec. of the Science Society at the College, White Street, Moorfields, E.C., or to myself at 105, Cambridge Gardens, North Kensington, W.

I venture to think, sir, that, looking to the fact of the low subscription and the benefits derived from membership, the easy access to the building, and the number of young men frequenting the institution, a large membership is extremely probable.—Yours, etc.,

WALTER BLIZARD.

\* \* \* \*

### THE ACTINOGRAPH.

SIR,—Your correspondent in last week's issue raised a slight doubt as to the true value of Hurter and Driffield's actinograph on account of the different latitudes, and in consequence different intensities of light on a given day or hour. Although the inventors tell us this can be overcome by having instruments made to suit equatorial latitudes, no great departure from the scale, I should say, need be made if used on the Continent. Anyhow, by altering the table of factors to agree with the greater or lesser actinic power of light, this could be overcome very easily when the intensity at midday is known. As to the reliability to be placed on the actinometer of which your correspondent speaks so highly, I have evidence of quite a contrary character. In this town, lately, one has been used by an experienced amateur, who found that he had given ten times the necessary exposure when using the instrument. I further learn that the inventors have admitted that the paper had not been carefully prepared, but had got damp, and did not change colour on a given time to agree with the actinometer readings on exposure to light. I have no other interest in Hurter and Driffield's actinograph than wishing to see that the most reliable instrument should take a foremost rank.—Yours truly,

Reading.

S. E. K.

## Apparatus.

### ZEISS' PHOTOGRAPHIC LENSES.

WE have already once referred (vol. xiv., No. 356, p. 84) to the lenses manufactured by Carl Zeiss, the renowned microscope objective maker, and we are now enabled to give the details of examination of two of these lenses, viz., Series III., Anastigmat No. 5, and Series IV., Anastigmat No. 5, and we give below a few comparative data.

Zeiss Anastigmat, Series III., No. 5, works with full aperture, at  $f/7.2$ , equivalent focus  $8\frac{1}{2}$  in., with an aperture of  $f/9$  a half-plate was covered sharp to the edges; with  $f/12.5$  it covered sharply a plate 7 by 5, with  $f/18$  a whole-plate was sharply covered, and with  $f/36$  a 10 by 8 was sharply covered.

English made lens, working at  $f/8$  equivalent focus  $8\frac{1}{2}$  in., with  $f/9$  marginal definition on half-plate poor, really only sharp with  $f/11.3$ ; with  $f/16$  covered 7 by 5, required  $f/32$  to cover whole-plate, and  $f/64$  to cover 10 by 8. The difference between the marginal illumination was very marked.

French lens, working at  $f/9$  (nominally  $f/8$ ), equivalent focus  $8\frac{1}{2}$  in., covered half-plate sharply with  $f/12$ , required  $f/19$  to cover 7 by 5,  $f/45$  to cover whole-plate, and barely covered 10 by 8 with  $f/64$ .



This series of lenses consists of a double front combination, and a triple back combination, and the two forms of lenses are shown in the accompanying diagram (fig. 1), the smaller sizes being fitted with revolving and the larger with Waterhouse or Iris diaphragms. Undoubtedly these lenses are specially adapted

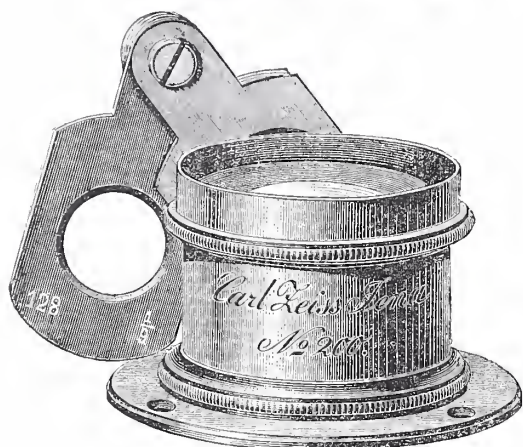
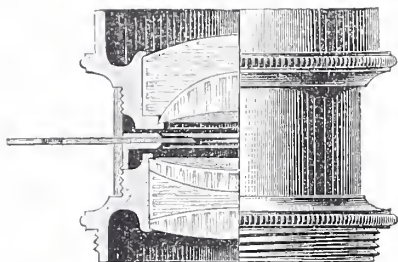


FIG. 1.

for instantaneous work, and may be said to include at once a rapid or wide-angle lens, according to the size of plate on which it is used; they should be *par excellence* the lenses for hand-camera work and for such instantaneous exposures as require very quick shutters and rapid lenses.

### SERIES III.

#### Anastigmat, $f/7.2$ .

| No. | Equiv. ins. | focus.         | Plate covered with $f/12.5$ .      | Price. s. |
|-----|-------------|----------------|------------------------------------|-----------|
| 1   | .....       | $3\frac{1}{2}$ | $3\frac{1}{2} \times 4$            | 70        |
| 2   | .....       | $4\frac{1}{2}$ | $3\frac{1}{2} \times 4\frac{1}{2}$ | 80        |
| 3   | .....       | $5\frac{1}{2}$ | $4\frac{1}{2} \times 5\frac{1}{2}$ | 90        |
| 4   | .....       | $7\frac{1}{2}$ | $5\frac{1}{2} \times 7$            | 120       |
| 5   | .....       | $8\frac{1}{2}$ | $5\frac{1}{2} \times 8\frac{1}{2}$ | 150       |

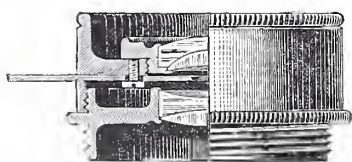


FIG. 2.

The second lens sent for examination is No. 5 of Series IV. Anastigmat, of  $7\frac{1}{2}$  equiv. focus, and this covered sharply with full aperture,  $f/12.5$ , a half-plate. It consists, as will be seen from the diagram (fig. 2), of two combinations, each

formed of two glasses cemented, placed close to one another and provided with a diaphragm, which, in the smaller sizes, takes the usual revolving form, and, in the larger sizes, Waterhouse or Iris. After careful examination of this lens, we certainly can state that it will take rank as one of the first of our medium angle and copying lenses. Personally, however, we should certainly prefer one of the Series III., as from its larger aperture being more useful, but even with  $f/12.5$  as an effective aperture, it will be not only possible to use this lens for outdoor work, but even for instantaneous shots. We append in this case also a brief table showing the data of the smaller sizes:—

### SERIES IV.

#### Anastigmat, $f/12.5$ .

| No. | Equivalent focus. | Plates covered with $f/12.5$ .     | Price. s. |
|-----|-------------------|------------------------------------|-----------|
| 1   | .....             | $3\frac{1}{2} \times 4$            | 64        |
| 2   | .....             | $3\frac{1}{2} \times 4\frac{1}{2}$ | 64        |
| 3   | .....             | $4\frac{1}{2} \times 5\frac{1}{2}$ | 64        |
| 4   | .....             | $5\frac{1}{2} \times 8\frac{1}{2}$ | 80        |
| 5   | .....             | $7 \times 9\frac{1}{2}$            | 100       |

To complete the series there are two other lenses: Series V., an anastigmat of wide angle, working at  $f/18$ , shown in fig. 3; and the smaller sizes are obviously useable for instantaneous work in bright sunlight, and for covering power, equality of illumination, and flatness of field are not to be surpassed. They are thus the most suitable lenses for copying, and are perfectly free from distortion and flare.

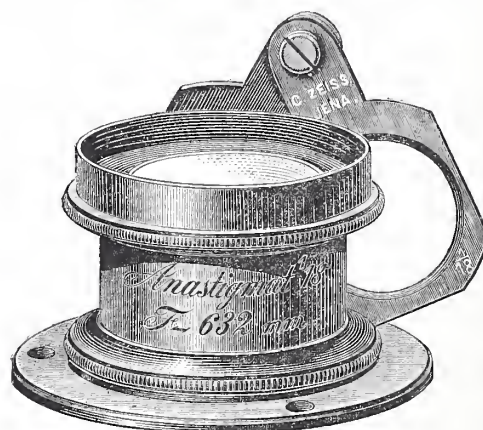
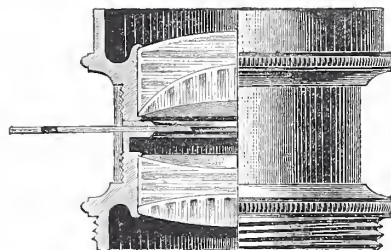


FIG. 3.

We have a series of prints taken with all these lenses and shall be pleased to show the same and the lenses to any visitors on Monday afternoon next. Quoting from our previous notice we state:—

The numbering of the diaphragms of these lenses is entirely different to our English system, and we do not think the method adopted at all an improvement; they are numbered by Dr. Rudolph in such a manner that the intensity corresponding to each aperture may be read off directly, the intensity to an aperture  $f/100$  being taken as unity. These numbers advance in ratios of 1:2. All these numbers are calculated from the ratio of the linear diameter of the effective incident pencil admitted by the stop to the focal length.

Mr. Kanthack (of 174, Charing Cross Road, London), the specially appointed English agent, will be pleased to forward a full price list, and a very interesting translation of the result of a series of experiments carried out with these lenses by Professor Giorgio Roster, of Florence.



# Photographic Procedure.

By E. J. WALL,

Author of the "Dictionary of Photography."

## SECTION V.

### THE SENSITIVE MEDIUM AND ITS SUPPORT.

Of the chemical principles involved in the preparation of the sensitive salts of silver, used in the form of an emulsion on certain supports, I do not intend to speak. There are numerous complete scientific treatises on this point, such as Eder's "Handbuch der Photographie," Fabre's "Traité Encyclopédique de Photographie," Meldola's "Chemistry of Photography," Abney's "Photography with Emulsion," etc., and many other works, which treat of the same in a more popular and possibly more practically useful manner to amateurs, a few of whom are always anxious to spend time and money in dearly buying the experience of how to make plates.

Briefly I will indicate the method of preparing an emulsion.\* An alkaline haloid, bromide or iodide, or a mixture of the two, is dissolved in an aqueous solution of gelatine, silver nitrate is added, and the emulsion "ripened" or increased in sensitiveness, poured out and allowed to set, then broken up and washed to remove the inert salts, the products of the chemical double decomposition. There is one requirement which practice has proved must be fulfilled with every emulsion if it is to keep, and that is that it shall contain no free or uncombined nitrate of silver, and to ensure this it is essential that we know what quantity of alkaline haloid is required to convert a given quantity of nitrate of silver into the corresponding silver salt. The following tables will then be of use, and enable any one to experiment in emulsion making to his heart's content.

ACKLAND'S TABLES FOR THE SIMPLIFICATION OF EMULSION CALCULATIONS.

No. 1.

|                       | Equivalent Weights. | Weight of $\text{AgNO}_3$ required to convert one grain of soluble haloid. | Weight of soluble haloid required to convert one grain $\text{AgNO}_3$ . | Weight of silver haloid produced by one grain of soluble haloid. | Weight of soluble haloid required to produce one grain of silver haloid. | Weight of silver haloid produced from one grain $\text{AgNO}_3$ . |
|-----------------------|---------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------|
| Ammonium bromide ...  | 98                  | 1.734                                                                      | .576                                                                     | 1.918                                                            | .521                                                                     | 1.106                                                             |
| Potassium " ...       | 119.1               | 1.427                                                                      | .700                                                                     | 1.578                                                            | .633                                                                     |                                                                   |
| Sodium " ...          | 103                 | 1.650                                                                      | .606                                                                     | 1.825                                                            | .548                                                                     |                                                                   |
| Cadmium " com. ...    | 172                 | .988                                                                       | 1.012                                                                    | 1.093                                                            | .915                                                                     |                                                                   |
| " " anh. ...          | 136                 | 1.25                                                                       | .800                                                                     | 1.382                                                            | .723                                                                     | .844                                                              |
| Zinc " ...            | 112.1               | 1.509                                                                      | .663                                                                     | 1.670                                                            | .600                                                                     |                                                                   |
| Ammonium chloride ... | 53.5                | 3.177                                                                      | .315                                                                     | 2.682                                                            | .373                                                                     |                                                                   |
| Sodium " ...          | 58.5                | 2.906                                                                      | .344                                                                     | 2.453                                                            | .408                                                                     |                                                                   |
| Ammonium iodide ...   | 145                 | 1.172                                                                      | .853                                                                     | 1.620                                                            | .617                                                                     | 1.382                                                             |
| Potassium " ...       | 166.1               | 1.023                                                                      | .977                                                                     | 1.415                                                            | .707                                                                     |                                                                   |
| Sodium " ...          | 150                 | 1.133                                                                      | .882                                                                     | 1.566                                                            | .638                                                                     |                                                                   |
| Cadmium " ...         | 183                 | .929                                                                       | 1.076                                                                    | 1.284                                                            | .778                                                                     |                                                                   |

Table No. 1 represents the actual weights of haloid of silver, as the case may be, required to convert or combine with one grain of another.

In order to make, say, ten ounces of emulsion by a new formula, which, for the sake of showing the working of the table, we will write down as follows:—

|                          |     |     |     |         |
|--------------------------|-----|-----|-----|---------|
| Bromide of potassium ... | ... | ... | ... | 150 gr. |
| Iodide of potassium ...  | ... | ... | ... | 10 "    |
| Chloride of ammonium ... | ... | ... | ... | 10 "    |
| Gelatine ...             | ... | ... | ... | 200 "   |

\* Although of universal employment, a correspondent has lately sarcastically attacked me for using the term "emulsion" for a mixture of silver salts in gelatine. But I must say that I do not know what else to call it, and whilst the term is of such general use and significance, I am content to use it.

we want to know how much silver nitrate should be employed in sensitising this mixture. For this purpose we use the first column, in which we find against each haloid the exact quantity of silver nitrate required to fully decompose one grain. Taking, then, the figures we find in column No. 1 against the three salts in the above formula, and multiplying them by the number of grains of each used, we have the following sum:—

|                          |                           |                            |
|--------------------------|---------------------------|----------------------------|
| Potassium bromide ...    | $150 \times 1.427 = 214$  | } silver nitrate required. |
| " iodide ...             | $10 \times 1.023 = 10.23$ |                            |
| Chloride of ammonium ... | $10 \times 3.177 = 31.77$ |                            |

Or the total quantity of silver nitrate required for full conversion, 256 grains.

No. 2.

|                        | Ammonium Bromide. | Potassium Bromide. | Sodium Bromide. | Cadmium Bromide (Coml.) | Cadmium Bromide (Anh'd.) | Zinc Bromide. | Ammonium Chloride. | Sodium Chloride. | Ammonium Iodide. | Potassium Iodide. | Sodium Iodide. | Cadmium Iodide. |
|------------------------|-------------------|--------------------|-----------------|-------------------------|--------------------------|---------------|--------------------|------------------|------------------|-------------------|----------------|-----------------|
| Ammonium bromide.....  | 1                 | 1.215              | 1.051           | 1.755                   | 1.357                    | 1.140         | .546               | .597             | 1.479            | 1.695             | 1.53           | 1.807           |
| Potassium " .....      | 1.215             | 1                  | .835            | 1.444                   | 1.141                    | .945          | .449               | .491             | 1.217            | 1.394             | 1.286          | 1.586           |
| Sodium " .....         | 1.051             | .835               | 1               | 1.167                   | .909                     | .719          | .381               | .343             | .914             | .717              | .686           | .906            |
| Cadmium " .....        | 1.755             | 1.444              | 1.167           | 1                       | .79                      | .655          | 2.342              | 2.324            | 1.186            | 1.085             | 1.146          | .906            |
| " " anh. ....          | 1.357             | 1.141              | .909            | .79                     | .655                     | .4            | 2.104              | 1.925            | .988             | .819              | .775           | .748            |
| Zinc " .....           | 1.140             | .945               | .719            | .655                    | .4                       | .381          | 2.104              | 1.925            | .988             | .819              | .775           | .748            |
| Ammonium chloride..... | .546              | .449               | .381            | .343                    | .4                       | .475          | 1                  | .914             | .776             | .678              | .566           | .615            |
| Sodium " .....         | .597              | .491               | .343            | .343                    | .4                       | .510          | 1.093              | 1                | .809             | .722              | .666           | .739            |
| Ammonium iodide .....  | 1.479             | 1.217              | 1.051           | 1.755                   | 1.357                    | 1.140         | 2.342              | 2.324            | 1.186            | 1.085             | 1.146          | .906            |
| " " .....              | 1.217             | 1.394              | 1.051           | 1.755                   | 1.357                    | 1.140         | 2.342              | 2.324            | 1.186            | 1.085             | 1.146          | .906            |
| Potassium " .....      | 1.394             | 1.286              | 1.051           | 1.755                   | 1.357                    | 1.140         | 2.342              | 2.324            | 1.186            | 1.085             | 1.146          | .906            |
| Sodium " .....         | 1.286             | 1.586              | 1.051           | 1.755                   | 1.357                    | 1.140         | 2.342              | 2.324            | 1.186            | 1.085             | 1.146          | .906            |
| Cadmium " .....        | 1.586             | 1.776              | 1.051           | 1.755                   | 1.357                    | 1.140         | 2.342              | 2.324            | 1.186            | 1.085             | 1.146          | .906            |

Table No. 2, gives in separate columns the relative converting values of each of the soluble haloid salts in ordinary use, showing how much of any salt must be used to replace one grain of another. In each column will be found a unit (printed in larger type) which represents one grain of the salt named at the head of the column; the other figures in the same column show the exact quantities of the other salts which must be used in lieu of a single grain of that particular haloid. Thus, taking the first column, which is headed "Ammonium Bromide," we find against ammonium bromide in the margin the figure 1, representing one grain of that salt. If we wish to know the relative converting power of potassium bromide, we take the number in the same column which stands against the latter salt in the margin, viz., 1.215; that is to say, 1.215 grain of potassium bromide will be required to do the same work as one.

Eder \* gives a rather more complete table, which also may be useful:—

One hundred and seventy parts by weight of silver nitrate require the following equivalent quantities of salts for complete conversion into the corresponding silver haloid.

|       |                    |                                                                         |
|-------|--------------------|-------------------------------------------------------------------------|
| 119.1 | parts by weight of | potassium bromide (KBr)                                                 |
| 139   | "                  | crystallised sodium bromide ( $\text{NaBr} + 2\text{H}_2\text{O}$ ).    |
| 103   | "                  | anhydrous sodium bromide ( $\text{NaBr}$ ).                             |
| 98    | "                  | ammonium bromide ( $\text{NH}_4\text{Br}$ ).                            |
| 136   | "                  | anhydrous cadmium bromide ( $\text{CdBr}_2$ ).                          |
| 172   | "                  | crystallised cadmium bromide ( $\text{CdBr}_2 + 4\text{H}_2\text{O}$ ). |

\* "Ausführliches Handbuch," vol. i. part ii, p. 222.



|         |       |                                                                                                                 |
|---------|-------|-----------------------------------------------------------------------------------------------------------------|
| 112.5   | parts | by weight of zinc bromide ( $\text{ZnBr}_2$ ).                                                                  |
| *126.33 | "     | " double bromide of ammonium and cadmium ( $2\text{NH}_4\text{Br} \cdot 2\text{CdBr}_2 + \text{H}_2\text{O}$ ). |
| 166.1   | "     | " potassium iodide ( $\text{KI}$ ).                                                                             |
| 145     | "     | " ammonium iodide ( $\text{NH}_4\text{I}$ ).                                                                    |
| 183     | "     | " cadmium iodide ( $\text{CdI}_2$ ).                                                                            |
| 159.5   | "     | " zinc iodide ( $\text{ZnI}_2$ ).                                                                               |
| 74.6    | "     | " potassium chloride ( $\text{KCl}$ ).                                                                          |
| 58.5    | "     | " sodium chloride ( $\text{NaCl}$ ).                                                                            |
| 53.5    | "     | " ammonium chloride ( $\text{NH}_4\text{Cl}$ ).                                                                 |
| 55.5    | "     | " anhydrous calcium chloride ( $\text{CaCl}_2$ ).                                                               |
| 109.5   | "     | " crystallised calcium chloride ( $\text{CaCl}_2 + 6\text{H}_2\text{O}$ ).                                      |
| 47.5    | "     | " anhydrous magnesium chloride ( $\text{MgCl}_2$ ).                                                             |
| 101.5   | "     | " crystallised magnesium chloride ( $\text{MgCl}_2 + 6\text{H}_2\text{O}$ ).                                    |
| 79.2    | "     | " anhydrous strontium chloride ( $\text{SrCl}_2$ ).                                                             |
| 133.2   | "     | " crystallised strontium chloride ( $\text{SrCl}_2 + 6\text{H}_2\text{O}$ ).                                    |
| 68      | "     | " anhydrous zinc chloride ( $\text{ZnCl}_2$ ).                                                                  |
| 119     | "     | " crystallised cobalt chloride ( $\text{CoCl}_2 + 6\text{H}_2\text{O}$ ).                                       |
| 85.25   | "     | " crystallised cupric chloride ( $\text{CuCl}_2 + 2\text{H}_2\text{O}$ ).                                       |

## Elementary Photography.

By JOHN A. HODGES.

### CHAPTER VI.

#### THE PREPARATION OF SOLUTIONS, ETC.

The Importance of Cleanliness—How to Clean Apparatus—"Ready-made" Solutions—The Developer—How to Prepare the "Pyro" Solution—"The Accelerator"—Potash—Soda—Ammonia; how to make the Solution—"The Restrainer;" how to Prepare—Hyposulphite of Soda; its Properties—The Fixing Bath—How to make Stock Solution of Chloride of Gold—The Toning Bath, and how to prepare it—Solutions necessary for "Bromide" Printing—The Ferrous-oxalate Developer; how to make—The Clearing Bath for Negatives—The Intensifying Solution; Care needed in its preparation and use—The Hydroquinone Developer—Labels; how to preserve—Distilled Water.

HAVING made all our purchases, and provided ourselves with proper dark-room accommodation, or its substitute, we have still to prepare the necessary solutions for the various operations of developing, fixing, etc., through which the plate has to pass, before we shall be really ready for work.

At the outset, and before we begin our first lesson in photo-chemistry, let me urge upon the reader the necessity of being careful and exact in the weighing out and measuring of the various chemicals used in making up the different solutions. Slap-dash guess-work will never produce good results in photography, and those who wish to succeed should lay the foregoing advice to heart. To the importance of cleanliness, and the avoidance of chemical contamination of any kind, I have already referred, and to this end one of the small glass measures should be reserved for the exclusive use of making up solutions. After measuring off the requisite quantity of one chemical or solution, the measure should be at once thoroughly washed under the tap, and dried with a cloth kept for the purpose. Neither measures nor dishes should be put away dirty, or allowed to remain with waste solutions in them, for if this be allowed to occur it will be a difficult matter to again get them *chemically* clean. When apparatus, either glass or porcelain, gets discoloured from such a cause, its surfaces should be brushed, by means of a stiff brush, with a solution of hydrochloric acid 1 part, water 4 parts, and afterwards well rinsed in water. Brookes' soap in the case of porcelain

dishes (not glass, the surface of which it scratches and dulls) will be found very useful in removing chemical stains.

The beginner may, if he so choose, though I by no means recommend him to adopt that course, purchase the solutions which he will require, all ready prepared for use, from the dealer from whom he obtained his apparatus. Such a mode of working, however, is so essentially a "rule of thumb" business, that it will probably commend itself to but few of my readers. Let the tyro, therefore, from the very outset, learn to prepare his own solutions, and so place himself in a position of independence.

We will begin work by preparing our developer. The reader, novice though he be, is probably aware that the image which is formed on the sensitive surface of the plate by exposure in the camera is not visible, but requires to undergo the process called "development" in order to make it so.

There are a great many different systems of development in vogue at the present day, each of which has its admirers, but were I to describe them all I should only succeed in reducing the reader's mind to a state of chaos and indecision. I propose, therefore, to describe two methods only, both of which have stood the test of time. In the first pyrogalllic acid is the reducing agent, and in the second hydroquinone.

To make the solution necessary for the former, weigh out 3 oz. of sulphite of soda, place it in a *clean* jug, and pour over it 10 oz. of boiling water, stir with a glass rod until dissolved. When quite cool add the contents of the 1 oz. bottle of pyro, and, finally, 20 gr. of citric acid. This should be kept in a stoppered bottle, and labelled "Pyro solution, No. 1."

The pyro solution is the true developer, but it requires the addition of an alkali in order to bring out its energy. Solutions of the fixed alkalis, potash, or soda, may be used, or liquid ammonia. In my own practice I invariably use the latter, and I advise the reader to follow my example. To make the solution, take a clean 10 oz. bottle, and pour into it 1 oz. of the strong ammonia, taking care, for the reasons already stated, not to inhale the fumes; add at once 9 oz. of distilled water—if tap water is used, the solution will probably turn milky, owing to the precipitation of carbonate of lime. Label this, "Ammonia solution, No. 2: Accelerator."

But ammonia used alone would cause development to proceed too rapidly, and therefore (for reasons which I shall deal with when I come to write on development) it is necessary to introduce a third substance into the developer, which is called "the restrainer." To prepare it, take another 10-ounce bottle, preferably of a different shape to the last, so that it may be readily distinguished in the dark-room, and pour into it 10 oz. of distilled water, to which add 1 oz. of bromide of potassium. Label this "Restrainer, No. 3."

We now only require one more solution to complete the list necessary for the production of our negatives, and that involves the use of a chemical which is at once the greatest friend and the deadliest enemy to the photographer. Its name is hyposulphite of soda, the familiar "hypo" of the photographer, and its function is to "fix" the negative after development, or, in other words, to dissolve out of the film all the sensitive silver salt which has not been acted upon by light and reduced by the developer. It is most essential to keep this substance away from all other solutions—the slightest trace of it in the developer, or in a measure; or a tray used for development would at once spoil the results. As a large quantity of it will be used, it may be made up in bulk by dissolving in a quart of hot water as much of the salt as the water will take up, keeping it in a well-corked bottle or jar.

\* Made by dissolving 350 parts of crystallised cadmium bromide, and 100 parts of ammonium bromide in water, evaporating and crystallising.



I have said that the above solutions comprise all that are necessary for the development of the negative, but it will be convenient to describe here the preparation of the solutions which will be required when we come to the subsequent operation of printing from it.

For the process known as "silver printing" we shall only require one additional solution, namely, a toning bath, the basis of which is a salt of gold. Before we prepare this we had better take the hermetically sealed tube of chloride of gold, carefully break it, and dissolve the contents in a clean stoppered bottle containing 15 drachms of distilled water. The reason for so doing is that chloride of gold being very deliquescent—that is, prone to absorb moisture from the air—we should lose a great deal of the costly chemical in attempting to weigh out small quantities, whereas, if we make it into a solution of the above definite strength, we shall know that each drachm of it will contain 1 grain of gold. To make the toning bath, place 4 drms. of acetate of soda in a large bottle, add 2 pints of distilled water, agitate until the crystals are dissolved, and then add 8 drachms (fluid measure) of the gold solution. This solution may be used over and over again until exhausted, when it will refuse to tone, and it improves by keeping, but should never be used until after twenty-four hours from the time of mixing.

For the other printing process which I shall hereafter describe, we shall require a distinct set of solutions, which, as they will keep indefinitely, we may as well now make up. The process I refer to is known as the "bromide process," and prints produced by it are developed in the same way as is an ordinary negative, but the solutions used are different, the particular form of developer known as "ferrous oxalate" being employed. This consists of two stock solutions, one a saturated solution of oxalate of potash, the other a saturated solution of sulphate of iron. By "saturated solution" is meant a solution in which is dissolved as much of the chemical substance as the water is capable of taking up. To make the first, put into a clean jug (the vessel employed should be retained for the purpose, and not returned to the kitchen for future domestic use) half a pound of the crystals of oxalate of potash, and pour over them about 12 oz. of boiling water, stir vigorously until the solution cools, and if some crystals remain undissolved it may be assumed that the solution is a saturated one. The solution will probably present a turbid or milky appearance, due to the presence of oxalate of lime. It should be poured into a large funnel, in which a filter paper has been placed, and filtered into a clean bottle. In this condition it will keep for a long time. It may then be labelled "Saturated solution of oxalate of potash, No. 1."

No. 2 consists of a saturated solution of sulphate of iron, and to make it proceed in the same way. Put half a pound of the sulphate of iron crystals in a clean jug, pour about 10 oz. of boiling water upon it, and stir till cool. Filter and bottle off, labelling it "Saturated solution of sulphate of iron, No. 2." When cool, add 10 minims of strong sulphuric acid.

The "alum bath" used for clearing negatives from stain consists of a saturated solution of alum, and is made by dissolving as much of the salt in boiling water as it will take up. This solution must also be filtered and labelled "Clearing bath."

The next solution is one that we must both prepare and use with the greatest care, as it contains one of the most active poisons known. It is called "the intensifying solution," and it consists of a saturated solution of bichloride of mercury. It is made by carefully dissolving in 5 oz. of distilled water,  $\frac{1}{2}$  oz. of the salt. It should be plainly labelled "Solution of bichloride of mercury," and a "poison" label should also be affixed to the bottle. Its use will be

fully explained when we come to deal with the intensification and reduction of negatives.

When we have prepared the next two solutions, we may consider our laboratory arrangements fairly complete. To make them we place in a 10 oz. stoppered bottle  $9\frac{1}{2}$  oz. of hot distilled water; to this we add 160 gr. of hydroquinone. This substance is not very soluble, but constant agitation will effect solution. When it has entirely dissolved, add 2 oz. of sulphite of soda, 60 gr. of citric acid, and 30 gr. of bromide of potassium. Label this "Hydroquinone developer, No. 1." Then, in another clean 10 oz. bottle, dissolve 160 gr. of soda hydrate in 8 oz. of distilled water. Filter, and label "Hydroquinone developer, No. 2."

I have already pointed out the necessity of avoiding any chance of mistaking one solution for another by carefully labelling all bottles. Convenient books of printed labels, containing the names of all chemicals, developers, and solutions in ordinary use, are now to be obtained from most dealers in photographic apparatus. One of these should be purchased, and all our bottles labelled. But if we content ourselves with simply affixing the labels to the bottles by means of the mucilage at their back, we shall probably find that, be we as careful as we may, the labels will sooner or later be affected by a portion of the solution running down from the necks of the bottles after they have been in use, and the effect of this will be that in a very short space of time the labels will become illegible, if, indeed, they do not entirely detach themselves from the glass. This state of affairs can, however, be remedied with very little extra trouble. Dissolve by means of gentle heat about 20 gr. of gelatine in 1 oz. of water, and with a small brush paint over each label, carrying the brush well over the margin of the label on to the glass. Obtain at the oil-shop some hard oak varnish, and, when the labels have become thoroughly dry, paint them over with the varnish in a precisely similar manner with a stiff hog-hair brush. Labels so treated will remain firmly attached to bottles for a very long while, and if at any time they should become discoloured, they may be washed or wiped with a damp cloth.

The photographer should always have by him a sufficient quantity of distilled water—it can be purchased in quantity at a very low rate—and all the solutions should be made up with it. Ordinary tap water is generally contaminated with foreign substances, more or less—many samples of London water being rich in carbonates, while in some country districts organic matter is found suspended in large quantities. By using distilled water difficulties of this kind will be avoided.

*(To be continued.)*

**Brighton.**—A meeting of the members of the above Society was held on the 23rd ult. Mr. Slingsby Roberts presided over a small attendance, which comprised the Rev. H. G. Day, Messrs. A. H. C. Corder (Hon. Secretary), Caush, Carmouchie, Ford, Fowler, Hardcastle, Mitchell, W. H. Payne, Webbing, and Williamson. In accordance with notice, Mr. Caush proposed that the members be asked to contribute towards a fund to pay off the financial deficiency. He pointed out that there was a deficiency of about £14, and said he thought the best way to clear it off was to ask the members to contribute to a fund to meet the sum due. Mr. Fowler seconded, Mr. Foxall supported, and the resolution was agreed to unanimously. Mr. Foxall then moved, also in accordance with notice, "That this Society, known as the Brighton Photographic Society, be dissolved, such dissolution to take effect immediately upon the settlement of the liabilities of the Society," which was agreed to nem. con. At the adjourned annual meeting which immediately followed, a Sub-Committee consisting of Messrs. Corder, Hardcastle, Webbing, and Williamson was appointed to wind up the Society in accordance with the terms of Mr. Foxall's resolution. The Chairman mentioned that an invitation had been extended to the members to join a photographic section about to be formed in connection with the Natural History Society.



## The Legal Side of Photography.\*

By J. WATSON BROWN, B.A., LL.B.

AFTER his opening remarks the lecturer divided his subject under the following heads: (1) Copyright Act, (2) Injunction with damages for breach of contract or good faith, and (3) Caricature of a photograph amounting to libel. Under the first head, of the Copyright Act, were contained the subdivisions, first of an assignment from one photographer to another, and second of the relation between the sitter and the photographer. The Copyright Act, 25 and 26 V., cap. 68 sec. 1, provided that at the time of assignment of any painting or drawing of a negative of any photograph, the vendee was not, merely by reason of his purchase, entitled to the copyright, for it was provided at the close of the section quoted that the vendee should not be entitled to copyright unless at or before the time of sale an agreement in writing signed by the vendor or his agent should have been made to that effect. The strict interpretation therefore of the section led to the result, that if there had been an assignment of the property without simultaneous assignment in writing of the copyright, the assignee would have no title to enter himself at Stationers' Hall as holder of the copyright. But modified by judicial decision this is not actually the law. The lecturer pointed out that both in this and other cases it would be impossible to understand the relation between Legislature and Judicature without a general view of the mode in which our statutes were framed. A bill is introduced drawn by a skilled draughtsman; its unity and consistency is dependent on the relation of the details to the leading conception in the draughtsman's mind, and the result of its alteration by a committee and by the House without sending it back to the draughtsman to be finally put into shape is precisely the same as if a committee of artists each armed with a pencil were allowed to make such alterations as they thought fit in an able pencil sketch that was brought to them. The result is that when an Act comes before the Courts, there is in some clause a ludicrous perversion of justice, that compels the Courts to give some subtle and ingenious twist to its meaning, in order to make it consistent with common sense and equity. This fate the Copyright Act has not escaped, for in Graves' case (4 Q. B. R., p. 715), one Walker having been fined under the Copyright Act for piracy of copyright at the suit of Graves, appealed on the ground that the painter of the painting in question had not registered its title, neither had the assignments prior to Graves been registered, and that Graves therefore had no copyright. The Court, however, decided that it was sufficient that Graves was registered as proprietor, that it was not necessary for him to deduce his title, and that consequently there was a valid copyright that had been pirated. This is an obvious evasion of the Act, but an evasion on equitable grounds; but of course the judges did not profess to evade it, but gave subtle and ingenious reasons for making the clause mean the reverse of what the unaided human intellect would suppose it to be. In point of fact, the legal eel cleverly wriggled out of the legislative frying pan, but did not upset it. The law therefore enables any undisputed proprietor of a negative to register as proprietor, subject to his stating on registration the name of the true author. But as to who is the author is again decided by the Courts. One might suppose that the proprietor of a photographic business was the true author, and in point of fact primary owner of any photograph taken on his premises, and that his salaried assistants were no more the authors than would a merchant's accountant be, as between him and the world, the author of the merchant's accounts; but under the case of Notlage and another against Jackson, the Court decided that the author was not the principal of the photographic business, but that such author was the skilled artist who actually took the negative. Thus it was clear that in law the copyright of an ordinary photograph belongs, in the absence of an assignment, to the actual individual who takes it, even though that individual be the paid servant of another, and uses his employer's utensils. This was confirmed by Mr. R. Thiele, of the London Stereoscopic Company, who in the course of a discussion with the lecturer, gave some interesting particulars of the custom of the trade. The lecturer stated generally that it would be better for anyone, as far as possible, to stick to the literal meaning of the Act, so far as circumstances would permit, rather than rely on any subtle interpretation given by the Courts, which in some subsequent

case might be modified in some other way. Again in reference to the second point under the Copyright Act, namely, the relation between the sitter and photographer, the Court had in the case of Pollard v. The Photographic Co. leaned towards the alternative that the sitter had the property in the negative, because it was executed on his or her behalf. But this was simply a dictum arising incidentally, and there had been no case on the point. It would be simply absurd to deny that the photographer was entitled to the plate when, as usual, the sitter had paid for a dozen or two copies with the arrangement that he was to get further copies at a reduced price, and if the point were expressly raised, it would probably turn on the question that what was executed on behalf of the sitter was not the negative, but the copies from the negative, and that the contract would be interpreted by the invariable usage, that the photographer retained the negative and that the understanding between the parties did not include anything else but the copies or positives that were contracted to be paid for. Mr. Thiele, in afterwards commenting on this point, stated that the usage of the trade was to consider the negative as the property of the photographer, but with the limited right of use subsequently referred to in the lecture. Referring now to the question of the use that may be made by the photographer of copies from the negative, in the absence of an express or implied permission, it was shown that in the case of Pollard v. The Photographic Company the photographer was restrained from selling or exhibiting copies, for example as a Christmas card exhibited in shop windows, because he was bound to give copies only to the sitter or by his or her direction, and that any more extensive publication was not only a breach of contract, but a breach of faith. Turning now to the question of amateur photographers, the lecturer expressed some doubts as to the mode in which the law could possibly deal with them, seeing that when an amateur photographed his friends any improper use of the photograph could neither be considered a breach of contract nor a breach of faith incidental to contract. But a hint appeared to assist the matter, both in the case of the limited use allowed to be made by the receiver of the letter, whose property it undoubtedly was, and therefore not a matter of contract, and also in the case of a person who had intruded into a lecture room without the lecturer's privacy, and was restrained from publishing a shorthand copy of the lecture, though in this case also there was no contract between the lecturer and the copyist, and therefore, strictly speaking, no breach of faith. In like manner, if an amateur scattered about copies of his friend's photograph, it is probable that, even in the absence of contract, he might be restrained from making a public use of the copies, which was not justified by the fair understanding between his friend and himself at the time. This is, however, purely speculative, and the recommendation to be given to amateur photographers was that if they ever took anyone else's photograph, except for his own use, it would be better to have express permission if a more extended use was contemplated.

In a discussion that arose it was agreed that no one could go inside another man's house without permission, to photograph his library, but opinions were divided as to whether the same objection arose if the photographer was trespassing on the man's property whose house was taken, and it was held by some that a trespass on a man's field was equivalent to trespassing inside his house, and in either case would be taking a photograph without permission. But it was agreed by all that a photographer who was not trespassing might take any scene, or the outside of any house or grounds that he thought fit, and might publish it as he liked. Space compels the omission of many details, but the last question on the subject, affecting both professional and amateur photographers, was that caricature, or libel by photograph, would undoubtedly be actionable as libel if it reflected ridicule upon the sitter and was published without his permission.

—◆◆◆◆◆—  
 "Amateur Photography" was the title of a very attractive lecture given by Mr. Gage Tweedy before a large audience at Plymouth Mechanics' Institute on the 23rd ult. Mr. Tweedy lucidly explained the uses of the various chemicals and papers used in photography, and as a practical illustration photographed the audience by flash light. This negative was developed, and the lecturer showed the result, a very bright picture, on the screen. Over a hundred beautiful views, principally local, and all taken by amateurs, were also shown. An illustrated lecture, "A Visit to the Channel Tunnel," is announced for next week.

\* Read before the Leytonstone Camera Club.



## The Lantern, and How to Use it.

By C. GOODWIN NORTON.

(Continued from p. 147.)

### CHAPTER IX.

#### BIUNIAL AND TRIPLE LANTERNS.

THE primary object of having two lanterns instead of one is to produce what is called dissolving effects; that is, when one picture is showing on the screen another slowly appears, the first one gradually fading away.

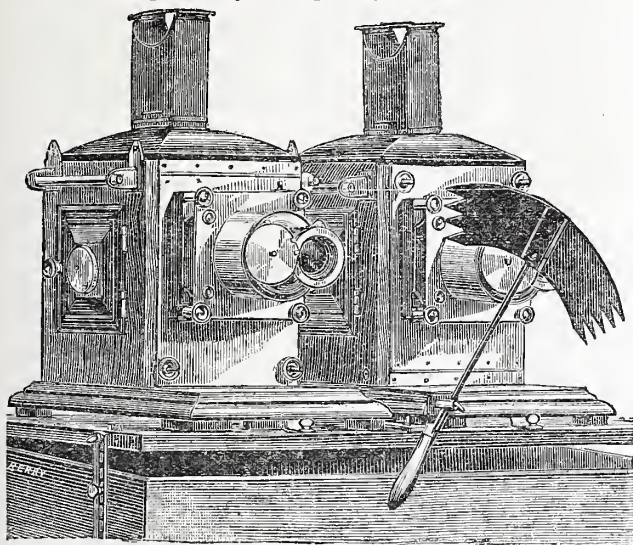


FIG. 19.

Dissolving can be effected when oil lamps are used, by two screens, usually termed fans, each of them having a deeply serrated edge, which gradually uncover the front opening of

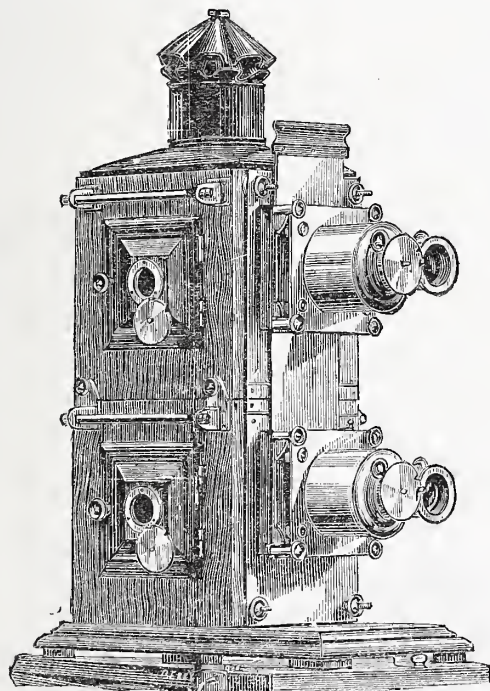
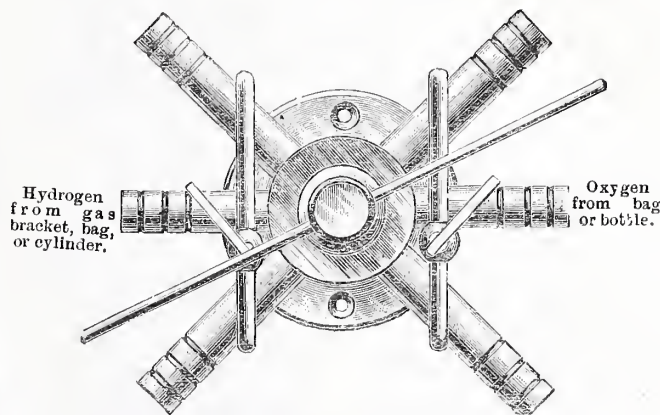


FIG. 20.

one lantern, and then cover that of the other. When limelight is used the same effect is produced by turning the lights up and down.

Fig. 19 shows the fans in use. This method is now only used with oil lanterns, placed in pairs, which obliges the operator to move continually from one side of the lanterns to the other. Several attempts have been made to place one oil lantern above the other, but no maker seems to overcome the difficulty of dealing with the question of the chimney of the bottom lamp, and as the price of a biunial does not greatly exceed that of two oil lanterns, the latter are not much used, especially as the limelight is now both simple and inexpensive to use. Lanterns are made which can be placed either side by side for oil, or one on the top of the other for lime-light (figs. 19 and 20). This pattern is convenient to many lanternists. When the fans are used they should swing on

H, 2.  
Hydrogen to No. 2 or bottom lantern. O, 1.  
Oxygen to top or No. 1 lantern.



H, 1.  
Hydrogen to top or No. 1 lantern. O, 2.  
Oxygen to No. 2 or bottom lantern.  
(Paste this with the two tables previously given.)

FIG. 21.

a pivot as shown, and not be worked from the back. The fans are hinged so as to permit the light from one lantern to show continuously, while the other can be cut off if desired. Biunial lanterns for limelight have what is called a dissolver, or dissolving tap, to turn the two gases in either lantern up or down at the same time; but as the two gases are not self-igniting, there is provided a small tube which permits a little hydrogen to pass sufficient to maintain the light while the main supply is cut off. With mixed jets a hydrogen bypass only is necessary, but with blow-through jets a small supply of oxygen should be kept on to avoid the minute explosion which is liable to occur each time the oxygen is turned fully on.

There are several different patterns of dissolvers, all producing much the same effect. The chief thing to note is that the light must be turned up to its full

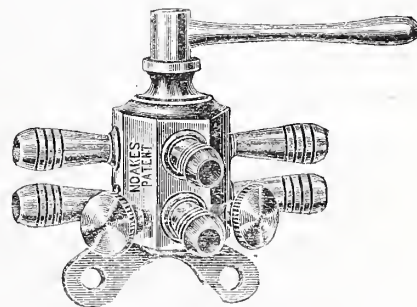


FIG. 22.

height in the one lantern before that in the other begins to diminish. The most popular form is known as the star dissolver. This acts exceedingly well, but it should be occasionally cleaned by taking out the plugs and lubricating with the smallest quantity of vaseline. Before undoing the screw at the back, mark all the parts to ensure their being replaced properly. The jets must be properly connected to the dissolver, or dissolving cannot be effected.

With a star six-way the matter appears complicated, but the diagram, fig. 21, will perhaps make the matter clear.



If the connections are made as above, the gas in the top lantern will be full on when the right-hand end of the cross-bar handle is at the top or opposite O, 1; this makes it easier to remember which lantern is on. When the bar is horizontal both lanterns are fully on, and when the same

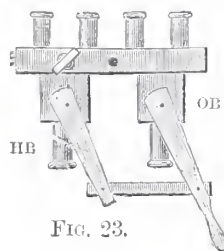


FIG. 23.

end of the bar is at O, 2, the top is shut off and the bottom full on. To dissolve, the handle is slowly passed from O, 1 to O, 2. Should the lanterns be placed side by side, the top lantern, or No. 1, should be placed to the right hand when facing the screen.

One drawback to these six-way dissolvers is the fact that the gas in both lanterns cannot be turned down at the same time. Messrs. Noakes have overcome this with their Gem dissolver (fig. 22). The handle can be turned to the back to cut off the gases from both lanterns without affecting the by-passes. The pictures from one or both lanterns can be instantly flashed on the screen. With all these dissolvers there is the possibility of the two gases getting mixed round the plug unless it fits very nicely. If there is a leak the rubber tubes are sometimes blown off. This is not a serious thing in itself, but the effect is not pleasant during an entertainment.

Mr. Wood's dissolving (fig. 23) is a little different in shape from any other. There are two taps connected by a lever, its chief advantage being that there is no danger of the gases mixing. It will be noticed that it has one by-pass only, for the hydrogen; the by-pass for the oxygen is supplied when especially ordered, but Mr. Wood considers it unnecessary.

Mr. Hughes' Simplex single dissolver, for either single, double, or triple lanterns (fig. 24) is a four-way, therefore two are required for a double and three for a triple lantern; the two gases cannot possibly mix in it, and the light in both lanterns can be turned down at the same time.

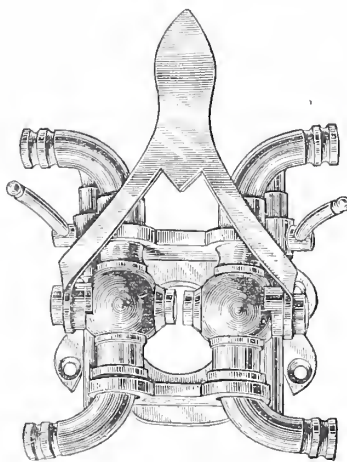


FIG. 24.

#### NATIONAL SOCIETY OF LANTERNISTS.

MR. W. T. STEAD, who was, as our readers know, induced to form the Lantern Mission from an article in the *Photographic Quarterly*, sends us the following appeal, which we gladly print:—

May I ask your kind assistance in bringing the following subject before your readers? The National Society of Lanternists, formed some months ago, for the purpose of promoting the more general use of the lantern, has appointed a Lantern Bible Sub-Committee, with instructions to begin the preparation of sets of slides illustrative of the whole of the Scripture narrative. That Committee desires to appeal, through your columns, for the co-operation of all those who are interested in the subject. With a view of bringing matters to a practical issue, they offer two small prizes of three and two guineas respectively for the two best lists of one hundred different subjects illustrating the story of the four Gospels, and a further prize of one guinea is offered for the best collection of pictures suitable for lantern slides.

#### THE LANTERN BIBLE COMMITTEE.

This committee will be glad to receive photographs and copies of pictures, engravings, etc., suitable for reproduction as illustrating the Scriptures, especially the Gospels.

Catalogues of any of the above will be useful, also any particulars of work already done.

The society has received offers of help from two photographers in the Holy Land.

The Committee believe that the best way of carrying out their object will be by photographs from living models; but the work will entail great expense and trouble, and will take perhaps years to accomplish.

In the meantime, something must be done to satisfy the cry for slides. We want help from those who can spare time for the work and money towards the expenses of obtaining professional assistance to supplement the work of our volunteer helpers.

For the present the Lecture Committee will take charge of slides, and will be glad of studies, whether sketches or photographs, representing the principal personages in Bible history.

Letters for either committee should be addressed to Mr. L. M. Biden, 20, Bucklersbury, London, E.C., and slides, photographs, and contributions sent to the hon. treasurer, Mr. W. T. Stead, Mowbray House.

#### PRIZES FOR THE BEST LIST OF PICTURES FOR SLIDES.

With a view to compiling as extensive a list as possible of pictures illustrating the Bible, and suitable for reproduction, the Committee invite those who are interested in the subject to send in a list of pictures suitable, and, to increase the interest, a friend has offered two prizes of three guineas and two guineas for the first and second best lists of at least one hundred different subjects. The conditions are appended.

They must be suitable for the uneducated, *e.g.*, some of the pictures of the early painters are inadmissible; for instance, Giotto in one of his frescoes represents a bishop in bed, in full canonicals and wearing his mitre, but what bishop ever went to bed so attired? But heads, faces, or portions of such pictures might be quite suitable. Again, a list should not contain subjects that are similar, such as a "Madonna" and a "Holy Family," or a saint who appears as one of the principal figures in another picture, although the latter might contain several more figures than the former; but two pictures containing the same figures would be allowed if the incidents depicted are different, *e.g.*, an "Ecce Homo" and a "Good Shepherd." Lists should be made out thus:—

| Name of Picture or Subject.  | Painter.        | City and Gallery or Church, etc., where it may be found. | Name and Address of Publisher of Photos, or Copy, or of Person who will lend same. |
|------------------------------|-----------------|----------------------------------------------------------|------------------------------------------------------------------------------------|
| C. "Annunciation."           | D. G. Rossetti. | National Gallery, London.                                | Engraved in <i>Harper's Magazine</i> , December, 1891.                             |
| C. "The Light of the World." | Hol. Hunt.      | Keble College, Oxford.                                   |                                                                                    |
| "The Last Supper."           | L. da Vinci.    | Milan.                                                   | Engraved and photographed.                                                         |

#### CONDITIONS.

1. The prize of three guineas is offered for the best list of not fewer than one hundred pictures, illustrating the story of the four gospels; another prize of two guineas for the second best list in the competition.

2. Each picture must have a clearly marked difference of subject.

3. In estimating the relative value of the tests, the following points will be specially considered:

- (a) Directness of appeal to an average assemblage of people.
- (b) Technical excellence.
- (c) Their varied character.
- (d) Their general illustration.

4. No limitation is imposed as to the source of the pictures. They may be derived from the old or modern masters; from paintings, sculpture, engravings, or prints, and may include landscape and topography.

5. The pictures should be suitable for reproduction as lantern slides, and particulars as to the sources through which copies may be obtained for this purpose must be supplied. Copyright pictures must be marked with C.

To help the Committee in forming a collection of copies of pictures suitable either for lantern slides or as studies for pictures from live models, a similar prize of one guinea is offered for the best collection of photographs, engravings, or other reproductions.

Each collection must be accompanied by a list of the pictures, signed with the name and address of the sender.

Competitors may send in more than one list. No list to contain fewer than twelve pictures.

Engravings, photographs, woodcuts, etc., are admissible.

The Committee will be glad to receive good coloured copies, if likely to be of assistance in colouring lantern slides.

Competitors desiring their pictures returned, must enclose a stamped addressed envelope or cover.

Descriptions or descriptive notes of any of the pictures will be very useful, both to the Committee and to prepare lectures to accompany the slides, as in the slide itself it is often difficult for the lecturer to find the points of excellence, which, however, are plainly visible when enlarged on a screen. If the description is not original, but copied, the source should be stated.

Lists must be sent in by March 31st, 1892, to the Secretary, Mowbray House, Norfolk Street, Strand, London, W.C.



## The "Open, Sesame," of Successful Photography.

By H. MACLEAN, F.G.S.,

*President, Croydon Camera Club, Member of Surrey Art Circle, etc.*

(Continued from page 168).

I HAVE here two small squares of paper of identical size fastened on to large sheets of cardboard; one of the latter is, as you see, white, and the other is black. If you critically compare the small paper squares with each other, you cannot fail to remark that the one on the black mount is much lighter in appearance than the other. The real truth is that the paper squares are of exactly the same tone, being cut from one evenly tinted sheet of pale grey. I have here another piece of this same paper, by means of which you can see for yourselves that there is no real, but only an apparent difference between the two squares.

The moral I wish you to draw from this very simple and maybe trite illustration is, that if you can deftly express the laws of light and shade you can get more out of your range of tones than is represented by the white of your paper and the brown of your deepest deposit of gold.

That is to say you can magnify the high lights, and intensify the shades. This intensification of the tones of a picture is only one out of the manifold applications which a knowledge of the principles of light and shade places at your disposal, as you will speedily find out for yourselves when you seriously take up the subject.

I trust that you do not think the foregoing examples too elementary for us to spend our time over, but I wished you all to see with unmistakable clearness that there is something tangible or rather, visible, to be gained by becoming acquainted with what I will call the *material* laws of composition.

In addition to the above there are what I will term the *spiritual* or intangible laws; this classification is only a rude one, but will serve my present purpose. Perhaps these intangible rules of art, although incapable of demonstration, are more generally observed than are the materialistic one. Let me give you an illustration of what I mean by intangible laws.

For instance, here is one which is very generally approved: "All that goes to make a scene beautiful should be exalted;" many artists would say exaggerated instead of exalted, but photographers had best be content with the minor form of emphasising the beautiful. I have cited the above because although it may not be so readily shown to your eyes still it is so self-evident a truism that no one here will, I think, venture to deny it. But if you accept it let us for a moment consider what that acceptance implies; it means that you must have the ability to recognise, to know beauty when it is present.

Now I am sure none of you who have been actively engaged in landscape photography for, say, the space of a twelvemonth, but are conscious that the faculty of seeing, and appreciating the beautiful in nature has been thereby much strengthened. By constant practice, intelligently directed, the eye has become sensitive to subtleties formerly unnoticed.

I dare say many of you have heard of the well-known case, cited by Dr. Vogel, of a man born blind who, like all other such afflicted ones, knew the forms of things only by means of the sense of touch; one day his sight was restored, and although he could thenceforth see perfectly, his *uneducated* eyes could not discriminate between a sphere and cube; and for a time he could only tell the one from the other by means of his fingers.

This is only an exaggerated presentment of the condition in which we all at first are when we try to distinguish any nicety of shade, form, or colour; it is therefore abundantly clear that where we have to search for such a protean and mirage-like quality as is that which we call the beautiful, we need the eye to be exceedingly well educated. More than that, it is imperative that the taste and the judgment have been highly disciplined, or we may find that while Dame Nature holds out her hands to us full of precious treasures, we are so engrossed by the weeds at her feet as to overlook her store of pearls and rubies.

You may take my word for it that to fully, quickly, and unerringly see the possibilities of scenery through which you may be passing, you need a mind and eye which are thoroughly trained. I go further, and say that such cultivation is necessary to fully appreciate what is and what is not in the highest degree artistically praiseworthy in your photographic prints. Try,

therefore, I say, with all your might to find out for yourselves what is this secret of abstract beauty, so that in the first place you may swiftly recognise it, and in the second by means of your technical skill introduce it into your negatives and positives.

I might perhaps rest satisfied with the above illustration of the value attachable to the intangible laws of composition, but if you will grant me a few more moments I should like to add some additional remarks, which moreover are more easy of direct application to your work than are those which have gone before.

There is one point in the production of prints which I would counsel you all to aim at; and that is to dominate your pictures with your own individuality. To do this requires a sustained aim and also a certain minimum of originality. This last faculty is, as we all know, none too plentiful; not, perhaps, because we have not its germ in us, but rather, I think, because we are as a rule too greatly influenced by hero worship; or, in other words, by the fashion of the hour; in their blind following of oftentimes tricky innovations photographers, I fear, show a truly feminine yearning for new things. No doubt you would like me to tell you how to express your individuality; unfortunately, words can, not do so, and if they could teach you the secret by means of learning a short formula, you may be sure that individualism would not be worth much. But as an indication of what I mean by the foregoing term, I will say that in the first place it demands consistency. Each individual has certain specialised perceptive and receptive faculties which differentiate him from all others; thus putting it roughly, one man has a strong appreciation of say, cattle, and a love of soft chiaroscuro, and a predilection for certain forms of cottages, or trees, or both, and so forth. Now, if that one follow his natural bent, instead of giving way to photographic dissipation, he will before long, by means of the acquired force and persistent direction of his efforts, to a considerable extent succeed in individualising his work from that of others; not only so, but, providing his natural talent has been fortified by art culture, he will at the same time insensibly aim for, and often attain, only those features which are in harmonious accord with his composition.

Before being done let me remind you that, besides the power of appreciating what is harmonious and beautiful, you have, especially in photographic work, to learn to readily perceive what is discordant, and intrinsically base and sordid. Of course we all can appreciate the major discords; thus a hansom cab in a hayfield would shock our sense of the fitness of things, but it is to the minor and more obscure artistically vulgar features that my remarks are directed; and it is to the elimination of such that many successful photographs owe their distinction.

I might continue to give you my opinions on a number of kindred points which it is well to always bear in mind, but it is not to-night my object to teach you composition, but rather to stimulate you to take up its study, by indicating the kind of power it places at your disposal. I venture to hope that if some of you have hitherto been inclined to underrate their value, you will henceforth recognise that if you can obtain a firm grip of elementary art principles, you will have in your possession the "Open, Sesame," with which you may in time gain entrance to that jealously guarded storehouse whose treasure includes photographic masterpieces.

It may perhaps be well, and mayhap helpful to some of you, if I add a few brief words of direction as to the best means of reaching this magic land. I may at once say that there is no express route to the abode of art; but the road is nevertheless open to all, and we may all in time reach it by tramping steadily along.

The capacity of the eye to acquire sensibility to minute gradations of form has been already dwelt upon. With a photographer this education of the sight is of course always going on; but just as one man may walk three miles an hour, and be satisfied with his steady progress, heedless that his fellow is speeding along on a cycle five times as fast, so we, by limiting our eye education to the practice it gets by judging views, are advancing much more slowly than if we bestrode the cycle of art.

In plainer words, we should in the first place diligently observe the best works of our great painters; and if this can be done with the help of a judicious, and learned critic to tell us what is strong and what is weak in their works, so much the better. It is, I suppose, needless to remind you that the Museum at Kensington is well equipped with suitable examples for your attention; especially useful being, I consider, the Sheepshanks



and the Chantrey collections; still more richly endowed with graphic art treasures is the National Gallery, but for those in their novitiate I am of opinion that the former is the most suitable. Yet nearer at hand is the Dulwich Gallery.

That which is even more potent than picture galleries is the companionship and conversation of artists. Those who have not walked through the country with an enthusiastic and gifted landscape painter do not know how much they habitually overlook.

Another means whereby we may hurry along to our goal is by consulting the writings of those who are considered to be leaders in the world of art. To give any representative list of such individuals, let alone of their books, would be out of place here, but I will, nevertheless, advise such of my hearers who have not already begun to read up the subject, to make an informal commencement with Hamerton's "Thoughts about Art" (in which, by the way, are some thoughts about photography). You will not find in this book short rules how to excel everyone else, but much pleasant and profitable talk on drawing, painting, composition, etc. When you get hold of the book, turn to page 180, and under "Synthesis in Form" read his remarks on photography, which are perhaps not quite just.

Then, again, there is Ruskin's "Elements of Drawing," which, by the way, I have heard described as a pernicious book. You can get this from our municipal library and skim it, but best of all buy it and read parts of it many times over.

Perhaps John Burnet's well-known book on "Composition" would be the best for those who restrict themselves to a single volume, but it happens that the work in question is out of print and very scarce. It can, of course, be read in many libraries, and has in part been republished in the *AMATEUR PHOTOGRAPHER*.

Whatever you do, be not satisfied with the few imperfectly expressed scraps of advice on picture making which are tacked on to many text-books of photography. I do not say that these are utterly useless, but certainly they are not more useful than is a dictionary of medicine to one stricken with a dread disease. In such a case one readily enough finds out by how much the doctor outweighs the dictionary. So with art, say I; go direct to the specialist, and not to the man made up of "shreds and patches."

Having said all this about high art, I should like, with your permission, to make an end with a few observations bearing more directly upon the craft of photography.

You may naturally enough like to know if I who attach so much value to art training thereby intimate my admiration of what some folk consider to be the most art-pervaded photographs of the day. I mean those whose chief characteristics are indistinct definition, brown tones on rough paper, and phenomenally dark skies. I most emphatically do *not* admire such products as *examples of photography*.

I consider that they neither raise nor dignify our art-science, because they are produced in direct defiance of the delightful charms and the splendid qualities which are the pre-eminent attributes of a fine photograph.

Thank Providence that to most of us nature is not a mist; and let us be grateful that if we are patient, watchful, and skilful our camera may yield us views whose consummate finish, natural tones, and exquisite gradations shall fill us with deep pleasure, and make us content *not* to take as our standard either the sepia drawing or the Whistler symphony, but to obtain our inspiration direct from nature.

You may depend upon it that the prevailing fashion for photographic obscurity will soon pass away—it is of a piece with that unwholesome striving for eccentricity which has given us a play without words, and which would no doubt like to give us a race-horse without legs.

But whether in this I prophesy truly or otherwise, I do hope that we, the members of this club, will one and all turn our faces against what I cannot but describe as a pernicious photographic heresy; one which has, alas! made converts amongst those whose previous record entitled them to be considered masters of picture-making. I do not see why we should not in time found here in Croydon a local photographic style and manner. In painting, the influence of particular bands of localised students has always been acknowledged. Why should this not be so with photography?

Painters have their Newlyn School and their Barbizon; why, therefore, should we not form one here in Croydon which, emphasising what we consider best, and eliminating everything inconsistent with our ideal, should in the fulness of time individualise our collective work from all other?

It is, may be, too soon to ask you to do this much, but it is none too soon to exhort you to acquire the "Open, Sesame," that may enable you to produce a master work, which, being neither the one nor the other, shall include in it all that is best in that noble triad, photography, nature, and art.

## Reviews.

*Instructions for Using Hurter and Driffield's Actinograph.* Published by Marion and Co., 23, Soho Square, London, W.

In the face of the discussions now going on in our columns on Hurter and Driffield's actinograph, this little pamphlet will save us a lot of trouble by clearly explaining the method of using it. Five examples are given of exposures worked out, and we should strongly recommend any of our readers who think of going in for an exposure meter to read this little brochure.

The method given for determining the speed of plates, according to Messrs. Hurter and Driffield has now been adopted by Messrs. Marion and Co., and we may incidentally mention that it is practically the same as that adopted by the International Congress of Photography.

## Catalogues.

W. C. HUGHES, BREWSTER HOUSE, MORTIMER ROAD, KINGSLAND, N.

The four catalogues Mr. Hughes has sent us form a complete handbook to the purchase of every kind of lantern and lantern fitting and slides, and the number of lanterns would be bewildering if it were not for the careful descriptions and figures illustrating the same.

THE CYCLOPEDIA of Photographic Brass Work and Camera Furniture, with price list of tools, materials, and fittings. Published by Lonsdale, Bros., 3, Cookridge Street, Leeds. Price 3d.

One of the most useful catalogues we have seen, and should be in the hands of every amateur mechanic. It contains some exceedingly useful information on "how to make, finish, clean, and lacquer brass work," and how to make camera bellows, and is well and profusely illustrated.

THE LONDON STEREOSCOPIC COMPANY, 54, Cheapside, E.C., and 106, Regent Street, W.

This is an extremely artistic little pamphlet of the various hand cameras sold by this Company, illustrated with some very good specimens of work done by the same in their special photo-mezzotype process.

**The Lantern Society.**—February 22nd, three sets of slides which had been made from three different 12 by 10 negatives, each set consisting of seven slides by seven different processes, were submitted for comparison. Two lanterns, each having the same kind of lenses and condensers, and arranged to give equal sized pictures with an equal amount of light, were used. Two slides from the first set were then shown on the screen, and the best having been selected by the audience the other one was removed and a third slide substituted, and so on until the best of the seven was finally selected. The same process was then gone through to get the second best, and so with all the seven. This was done with all three sets. No information whatever was given to the audience concerning the slides, either as regards the makers' name or the process, until the judging was finished, when it was found that the order of merit was as follows:—First set:—(1) Collodio-bromide (Ackland); (2) Gelatine; (3) Wet collodion (York); (4) Wilkinson; (5) Collodio-bromide (Brooks); (6) Albumen (Levy, Paris); (7) Collodio-albumen (Ackland). Second sets:—(1) Collodio-bromide (Ackland); (2) Gelatine; (3) Wilkinson; (4) Collodio-albumen (Ackland); (5) Albumen (Levy, Paris); (6) Collodio-bromide (Brooks); (7) Wet collodion (York). Third set:—(1) Collodio-bromide (Ackland); (2) Gelatine; (3) Wet collodion (York); (4) Albumen (Levy, Paris); (5) Collodio-bromide (Brooks); (6) Wilkinson; (7) Collodio-albumen (Ackland). The agreement between the two best slides in each set is worth noting. A new spirit jet by Mr. Turnbull of Edinburgh, and a lantern slide printing frame by Mr. Doré of Sandown, Isle of Wight, were exhibited, also a new projection lens by Wray, of nine inches equivalent focal length, and two and a quarter inches clear aperture of back lens, which gave most admirable results. This lens is corrected for photographic work as well.



## The Study and Practice of Art in Field Photography.

By A. HORSLEY HINTON.

(Continued from p. 65.)

### V.—RUTS—SOME REMARKS ON ROADWAYS AND THEIR TREATMENT.

TRUDGING along on the "king's highway"—and, by the by, the serious photographer is always (if distance, time, and the weight of his apparatus will permit) a resolute pedestrian, because being on foot the landscape is seen from the same standpoint from which the camera would see it, and there is time for the observation of little things (but of this more anon)—on the great main road one might find interest in watching the tracks made by the numerous vehicles which have passed on before, and one might be led into a speculation as to their various origins and destinies. Such a vast diversity of wheels on a country road!

The waggons that came this way laden with farm produce bound for the market town, or piled with yellow sheaves on a shorter journey from cornfield to the stack yard; the quaint covered van with its single plodding horse, which, passing from village to village to rest anon by the side of the open heath, forms the moving home of its gipsy tenants; the timber wain that serves as the funeral car of some great forest chief whose branching crest trails behind and sweeps the dust. Sharper and clearer is the track of the squire's carriage, the quick clatter of whose horses' hoofs resound far along the road, the light spring cart that carries the farmer to a distant field, each has its own way of impressing the surface of the highway. Or yet again the heavy two-wheeled cart the sound of whose rhythmic jolting may be heard at any hour, night or day, as pressed into any sort of service it rolls along in obedience to the slow and steady pace of the stout horse, which, while its driver is as often as not fast asleep under a sack, somehow finds his way and avoids collision with a fine sense which is perhaps more than instinct.

Following the cart ruts with some such thoughts as these, we leave the high road and turn down some narrow way or lane, where the ruts become the cause of rough walking; deeper and wider they grow, for this bye-road receives little attention from the road surveyor or local authorities, and is often shunned by travellers in light carts, so that the broader wheels have it to themselves and leave their deep impression on the soft surface. Steep hedge-crowned banks on either side drain their moisture into the narrow road which they shadow, so that it is always wet and muddy, and the foot passenger must keep close to the bank and bushes, festooned with long threads of hay which were caught from the passing hay-cart, for there is little room to spare, and two carts coming from opposite directions have often some trouble to pass, except at such a point where a gate to an adjoining meadow makes the road wider for a few yards.

But we started to consider cart-ruts from the photographer's standpoint, and in such a deep-set way as we have imagined little opportunity offers for picture-making. But the condition of things may not last, and ere long the banks come down to the road level, and the stiff and civilised air of the houses and fences which we left on the great main road have now given place to the wild open country, or better still for our purpose if the ruts turn off from the road to make a short cut across a region of waste grassy land, where no roadway was ever intended, and the wheels sink deeper as if they never would come up again, and their tracks filling with water gleam like

ribbons of bright light as the sun goes down and the landscape grows dark.

Long after there is no light left anywhere, only in the sky, and not much there, the waters standing in the cart-ruts are gleaming clear and bright, and their beauty is in their irregularity, now bright against a dark reflection of the side of the rut, disappearing behind miniature cliffs of rich mud, beyond again a wavy line of light widening, decreasing, lost, and appearing with every curve, diminishing and fading in distance and in gloom; double, because of the pair of wheels, but never severely parallel, because cart wheels are inclined to be shaky, and because of the inequalities of the ground.

And now our good reader, at the expense of whose patience we have indulged in the foregoing attempt at word painting, does he recall any such scene? Yes? And has he ever attempted to reproduce it by photography? No? Well, then, it will be no unprofitable essay if, having noted such a spot where broad and clumsy wheels and horses' hoofs have roughly grooved and hollowed the soft earth, and, either from drainage of moisture from the ground or subsequent rains, pools and channels of water lie in the hollows like tiny alp-locked tarns and little mountain gorges, and visiting it under various conditions of



An old wagon track near Rye.

light, duly noting the effect, peradventure a tract of country hitherto regarded as unlikely to yield the material for a picture will induce a visit with the camera and the exposure of two or three plates.

Probably it will be noted that everything depends upon the position of the light. The pools of water are rarely very clear, and their local colour much the same as the surrounding mud, so that with the sun high up or behind us, not only is the water almost undistinguishable but the ruts themselves look flat as the sunlight gets equally down into the hollows as on the crests of the ridges; but with the source of light in front there is a great difference, and the irregularities of the surface are fully appreciated or are even magnified when shadows and dark reflections are merged, making striking contrasts with the reflected light on the water.

A similar transformation may be seen in the dull and murky streets of a city, when, after rain, the afternoon sun gleams out for an instant in front of us, and the wet and muddy thoroughfares glitter and sparkle with the bright hues as of precious metals in contrast with the long vertical masses of shadow and reflections of tall buildings projected dark against the light.



The greatest value of our cart-ruts is, perhaps, felt at just such an hour when the photographer is accustomed to regard exposures impossible, and packs up his things for the homeward journey—just when daylight is fading and much of the landscape is wrapped in twilight—then the light seems to linger longest on the pools of water in our ruts, and the long, dark, and light winding lines lead pleasantly into the picture, in which they gradually lose themselves.

Let some critics ask for pictures in a higher key—yet it appears to us that twilight effects are not sufficiently appreciated, or, at least, their reproduction too rarely attempted with full success.

The failing light and the consequent absence of detail often impart surprising breadth to the landscape. Perhaps it is that photography is particularly adapted to sombre effects, or it may be the stern sobriety of our northern temperaments, like the solemnity which pervades Teutonic art; but these pictures of the evening gloaming, the mystery of the declining day, and the quiet melting of the shadows at the dawning are effects which impress us deeply, and live, perhaps, longer in our memories and give a more lasting, if more serious, pleasure than all the glad radiance of the sunny noon-day.

Still, our rugged roadway and its ruts are quite worth our attention in the broad daylight, and should be well considered, and may often serve us in our foreground by leading attention into the picture, as already suggested.

Two points may here be noticed as regards the exposure and position of the camera. In the first place our pools of water are nearly sure to come out in our negative denser than we would wish, so that in the print the result is a plain white patch; hence, a somewhat full exposure is needed, and even then that particular region of the plate may be improved by a little, a very little discreet local reduction. At the same time we need not be afraid of our pools of water coming out as very strong high lights—they are so in nature.

Note this down in your pocket-book when exposing the plate, and you will then see how very conspicuously light, far lighter than everything else, lighter often than a piece of white paper laid on the roadway, are these light reflecting pools of water.

And then, secondly, the perspective of a roadway which commences from the foreground is always troublesome and requires care and judgment. Whether the lens exaggerate this or not, the fact remains that the roadway often very inconveniently occupies the entire front of the picture, its breadth extending from either corner at the base of the plate. Hence it will often be well to let one edge of the road run off out of the picture as it approaches us, so that the other edge comes somewhere near the middle of the base, as, for instance, in the sketch of "The Common Road" in our preceding chapter.

We remember well encountering such a difficulty when having found a subject which particularly fascinated us on a ramble about three miles out from Hastings, just beyond the marshes of Bulverhythe. A narrow road with green banks and hedges led, with one or two gentle windings, uphill to a delightful group, composed of wind-bent trees, an old cottage farm with its quaint chimney stacks, a huge barn and the accompanying out-houses and hay-ricks; but place the camera where we would the width of the road spread out as it came towards us and monopolized the entire foreground and overpowered everything else. Possibly this was only true to perspective, but it was not pleasant, for the roadway was bare and no figures were forthcoming, so that three-fourths of the plate was the whitened surface of a dusty road. Eventually, however, the difficulty was over-

come by mounting the roadside bank and scrambling through a gap in the hedge into the adjoining cornfield.

Now the road was some four feet below us, and the rounded top of the low hedge-row, which might otherwise have proved as great a difficulty as the road, broke up conveniently as it came to the gap through which we had climbed, terminating in a grand clump of yellow ragwort and thistle. The whole composition was a fine example of converging lines—the roadway with its faintly indicated wheel ruts and a bit of the hedge on the further side, and then the hedge on our side, whilst at the margin of the field in which we now stood a half formed beaten path which fringed the field so that one might walk without trampling on the corn when it was standing—all forming or suggesting lines, which, converging, met somewhere near the farm which formed the chief object in the composition.

But enough for the present of road and roadway. We may come upon it again in a future chapter, when under the fierce rays of a summer sun it lies white and dusty, its surface so hard that the cart wheels make impression only in the thin layer of dust and are obliterated again with the first passing breeze.

(To be continued.)



## Lenses.\*

BY JOS. CHAMBERLAIN.

It may appear rather presumptuous on my part, with the very limited amount of knowledge I possess, to address you on such an important matter as lenses; but I would wish you to understand that I am not treating it from any scientific point, but rather from the fact that Mr. Wray, an eminent maker of lenses, having acceded to my request to send down specimens of the different kinds that he makes for the purposes of the art and science of photography, which I thought would be of much interest and instructive to us all, and assist in making one more of our meetings of that pleasant nature which they always appear to be. I think it is one of the most difficult things a beginner, and for that matter any ordinary amateur, has to decide is the question which lens is the best to purchase, which will be the most useful for the amount to be laid out on that most important item of the apparatus necessary to carry on the work intended.

A simple lens is best described as a piece of glass both sides of which have been ground and polished to a curve, and according to the nature of that curve so is the distinctive name of the lens. Very few people have an idea how exact these lenses have to be ground. The two varieties generally used are crown and flint, the latter generally being the outer lens of double combinations. When the optician first has these from the manufacturer, they are discs of rough and unsightly glass plates. The first thing to be done is to decide as to the form these shall take according to the purpose required, then the process of grinding commences. They are chipped, and then fastened in a lathe with a special compound, the tools being of metal. These are used with wet sand in the first place, and as the work proceeds this is replaced with emery, and after with very fine pumice stone powder; this constitutes the grinding. The next process is polishing, which is done with the finest rouge. Here I believe the details vary with different opticians, and I think one must be actually adapted to the work, as the touch and feeling in doing it is most difficult to acquire. Of course, the cheaper lenses have not the amount of work and care expended on them that those have which are to be tested and brought up to the highest standard, the tests for which are very critical, and faults which to an ordinary observer are invisible cause them to be rejected as not perfect. It is stated that a 1,500,000 of an inch will have a bad effect in the formation of an image. After the grinding and polishing, during the latter stage, scratches have to be carefully guarded against, which would incur regrinding and polishing. The lenses are again put into the lathe for the purpose of centering; that is, the optical axis is found, and will be seen when the two images which the surface gives on the spindle revolving are stationary. The next step is a very delicate one, and one in

\* Read before the Tunbridge Wells Phot. Assoc.



which there is much danger of cracking the lens, and that is cementing. It appears to be quite a common thing to lose a lens during this part of the work, and there appears to be a great deal of care required to prevent the cement from turning yellow, which would mean a great loss of light. After this they are temporarily mounted and tested. It must be quite understood that each lens is really an experiment, as no two are exactly alike; each has an individuality. There is a great tendency to increase the speed and consequently aperture of the lens, which means for every degree of increase an enormous amount of mental and manual labour to the optician in grinding, testing, and correcting them.

The single achromatic lens is composed of a bi-convex lens of crown glass cemented to a plano-concave lens of flint glass; this was discovered by a French optician named Chevalier, but sometimes these were made by cementing a flint concavo-convex lens to a plano-convex crown, but having the same external form; and again another form was used, which is the meniscus, a plano-crown being cemented to a plano-concave flint at their flat surfaces. It is supposed that greater flatness of field may be secured with the meniscus, or, as some call it, the periscopic lens, but I think I am right in saying the latter was a single piece of glass; and no doubt the early one employed by Daguerre, which was non-achromatic and of the meniscus form, was one of these. There are some who consider it more convenient and practical to correct spherical aberration for light from distant sources with the plano form, and this requires the stop to be placed at a greater distance than the meniscus, where it has to be put in close proximity to the lens. These are termed achromatic, as they transmit a ray of light without decomposing it into the various colours of which the white light is constituted. Such a lens will give pictures possessing great sharpness all over if a diaphragm is placed in front of the lens, which also causes objects which are situated at varying distances to be equally sharp one with another. In single lenses if the diaphragm is placed too near the lens it almost always causes a flare-spot; this is sometimes due to the temptation to secure less distortion and a wider field of angle, but if very troublesome, an optician would alter the position of the stops, whilst unscrewing a lens a turn or two in its cell may be sufficient. Sometimes there is a want of definition, which may be from spherical aberration uncorrected for oblique pencils, and sometimes from curvature of the field. These may be improved by reducing the size of the stop, but if it is only the latter, the sides and centre of the plate can be more uniformly focussed if we take a point midway between the centre and one end. These single lenses when stopped down are considered by some the best for outdoor work, if we exclude architectural subjects. I think I may here say that it very rarely occurs that more than three stops are required for landscape photography—one small enough to give good definition over the entire plate, which would require a rather long exposure; one of medium size, for practical work; and a large one, nearly the full opening of the lens for instantaneous work. I have here from Mr. Wray a 21 in. and a 12 in. single lens, and a Waterbury meniscus of 7 in. But as these are not suitable for architecture, on account of the curvature to lines which they impart near the margin, a combination of lenses was designed, which invention was claimed by Dallmeyer and Steinheil, and also by several other makers, an American firm brought out the Globe lens about the same time, or even before, as I think this was in 1860. Dallmeyer called his the Rapid Rectilinear, Steinheil the Aplanatic, whilst Ross gave his the name of Rapid Symmetrical. I believe Dallmeyer made his of crown and flint glass of a special kind, whilst Steinheil used flint glass of different degrees of density. Numbers of an almost similar kind are manufactured and sold under a variety of names by different makers in this country and abroad; these doublets have good definition and great rapidity of action, and since the invention of the new optical glass it has been possible to increase the aperture, and what follows, greater rapidity of the lens, but with the increase of the size of the stop we are apt to lose depth of focus. The rapid rectilinear lenses sent me by Mr. Wray are from 15 by 12 down to 5 by 4 mounted in brass and aluminium. The President has kindly brought a Dallmeyer 13 by 11, a Watson 12 by 10, a Beck whole-plate and a Ross whole-plate, Mr. Brittain sending me amongst others a Ross whole-plate. It is found by making the lenses much thicker and also with shorter radii of curvature, that they can be brought closer together, and will then include a very wide-angle of view; these are slow, but can be used where it is impossible to get the camera far enough away to use the rapid rectilinear. I

have here a Wray wide-angle rectilinear and a Ross portable symmetrical. I believe in the wide-angle rectilinear lens of Dallmeyer, the foci of the back and front is different, but the stop plate is so placed as to prevent distortion. These lenses are of a meniscus form, work with a small aperture having rotating stops in the small sizes, though some makers are fitting the iris diaphragm to the larger sizes. It is also found in other doublets that the front and back lenses are of different foci, and there is no reason why lenses of a widely different focal length may not be taken as components of a doublet, and if the stop is properly adjusted there would be no distortion from the working of it. We are told that either of the combinations of a doublet can be used as a single lens, but it has struck me that if the back lens is used, it ought to be reversed so that the convex surface of the lens is towards the subject, and again it appears that the stop may be in the proper place or it may want adjusting for the extra length of focus; this is a matter for consideration.

Dallmeyer introduced some time before 1860 a triple achromatic lens, all three lenses having a different diameter. The centre one being the smallest, it was considered to be the best architectural and copying lens till the rapid rectilinear superseded it. Having six reflecting surfaces, combined with the small aperture that it could be worked with, consequent on the size of the centre lens, it was slow in action, but the marginal lines in architecture were straight. I am enabled to show you one of these, through the kindness of Mr. Lewis. I believe this was the first lens to have the flint or denser surface outside.

The euryscopes are supposed to be an improvement on the rapid rectilinear; these work with a very large aperture, varying from  $f/4$  to  $f/6$ , but this is more than can be expected, as the field is not flat and therefore only the central portion should be used.

The lenses for detective, or more properly hand cameras, may be what is known as fixed focus. There are lenses which have depth sufficient to render everything sharp beyond a certain distance; this of course varies according to the focus of lens and the size of stop used, as a lens having a short focus will have more planes in focus than one having a longer focal length; but there is no doubt that a medium focus lens is the most satisfactory for using in a hand-camera, and a R.R. will be found the most useful all-round lens, as you have no distortion and by using a larger aperture are quite as quick as a single lens. The one Mr. Wray has sent me down is a 5 in. with iris diaphragm and works at  $f/8$ ; the mounting is shorter than the R.R., which makes it more convenient to use. These are made of Jena glass. Mr. Brittain has also sent me one of Taylor, Taylor, and Hobson's.

I mention the portrait lens, but as they are very expensive it is rarely that amateurs add this to their equipment, as the R.R. lens combined with the quick plates to be had now are quite capable of taking a portrait in an ordinary room. It is necessary that the lens shall transmit the greatest amount of light to shorten the exposure, and also be extremely sharp when no stop is used. The inventor of this, Professor Petzval, so perfected it when he first brought it out that no material improvement has been found possible to make in it since; they are generally of narrow angle, large diameter, and short focus, but the quality termed depth of focus is limited, the field is round, and the marginal definition bad. The large apertures of these lenses are their principal value; it is stated that a lens of 1 in. aperture is four times slower than one of two inches. Mr. Cassingham has brought me one of an old date, the name on it being Cox.

There is a feeling that stereoscopic work is coming into fashion again. It was in 1860 that Dallmeyer introduced some stereoscopic lenses of the portrait form, and Mr. Lewis has been good enough to bring a pair of 4 in., the back combination being  $1\frac{1}{2}$  in. in diameter, and the front about  $1\frac{1}{4}$  in.; they work with full aperture. If the front lenses is reversed and placed behind the diaphragm, it makes a good ordinary 6 in. view lens. The angle of view of the whole lens is not large, but it has a great depth of focus. Up to date it was the fastest known, and instantaneous work was quite easy with wet plates. They were mounted on the original camera, which was in splendid order. These lenses were superseded later on by the patent stereoscopic lenses, 5 in. equivalent focus, which are entirely free from distortion and flare, and can be used for instantaneous views, small portraits, and groups. Mr. Wray has introduced a special lens which he calls a triple landscape. The one he has sent me down is  $15\frac{1}{2}$  in. focus; it is described as a naturalistic lens, and all "microscopically sharp" amateurs are advised to have nothing to do with it. There are many, however, who admire a soft picture with a certain amount of general



diffusion equally distributed over the plate, and this is the lens for them. Mr. Dallmeyer has brought out a new lens which he has named the Tele-Photographic lens, and with its aid distant objects may be photographed. I understand that a lens suitable for a half-plate has a focus of  $37\frac{1}{2}$  in., and the camera only requires racking out  $10\frac{1}{2}$  in. from the flange; it is practically immaterial how far, as it is necessary to focus with the two elements of the lens itself, but it is quite impossible to have distant and near objects in focus on the same plane. Mr. Wray has also sent me down two lantern objectives, one of 6 in. and one of 9 in. focus, the aperture being  $f/1$ . Both these fit into a jacket which is very good for changing the one lens for the other. I believe Mr. Wray pays special attention to marking his lenses with the accurate focal length. He has been good enough to send me an ingot of aluminium in its pure state, to show the weight; and the lenses he has sent me in pairs, so that comparing them as regards weight I find:—

|                  |       |                 |       |       |       |                  |       |           |   |
|------------------|-------|-----------------|-------|-------|-------|------------------|-------|-----------|---|
| 15               | by 12 | weighs          | 2 lb. | 4 oz. | brass | 1 lb.            | 5 oz. | aluminium |   |
| 12               | "     | 10              | "     | 1     | "     | 13               | "     | "         | ; |
| 8 $\frac{1}{2}$  | "     | 6 $\frac{1}{2}$ | "     |       |       | 12 $\frac{1}{2}$ | "     | "         | ; |
| 10 $\frac{1}{2}$ | "     | 5               | "     |       |       | 9                | "     | "         | ; |
|                  |       |                 |       |       |       | 4 $\frac{1}{2}$  | "     | "         |   |

which is very much in favour of the latter metal and considerably decreases the weight of the equipment of an amateur. In conclusion I may add that for an amateur a R.R. of half-plate, if that is the size intended to be worked, is the best for general use; and if a second can be afforded, then a wide-angle; and provided the finances will allow a third, a single landscape, say the W. A. R. 6 in., and the R.R. 8 $\frac{1}{2}$ . He would then have, by using the back combination of each lens, 6 in., 8 $\frac{1}{2}$ , 12, and 17 in. focal length. The lenses sent me down by Mr. Wray are valued at more than £100.

## Quarterly Examinations in Photography.

**Question 10.**—Give brief instructions for silver printing.

**ANSWER.**—In order to take a silver print from a negative, we must first of all be perfectly sure that the negative is quite dry. If not, and we obtain a print from it, the negative will be almost certain to suffer from silver stains, which it will be impossible to remove. To prevent risk of stain it would be better to varnish the negative when dry. Supposing the negative be ready for use, we place it in the printing-frame film side up, and lay upon it a piece of our silver paper (which must also be dry). Then place the back in the printing-frame and put the springs into position. A general rule to be observed is "Never print in direct sunlight." This rule may be set aside if the negative be very dense. If the negative be very thin, a much better print may be obtained by placing one or two thicknesses of tissue paper over front of printing-frame. Another way of obtaining similar results is by using green glass. Having placed the frame in such a position as will be most suitable for it, we leave it for a length of time varying with the actinic power of the light and the density of the negative. When we wish to examine how the print is progressing, we take the frame where the light is not very strong, and open one end of the back. If not sufficiently printed, place the frame in its original position for another period. On examining it the next time it will be advisable to notice the other half of print.

When the print is sufficiently done, which is known by its having a slightly deeper tone than is required when finished, we remove it from the printing-frame, and put it one side until ready for toning. This may be conveniently left until evening, and may be done by gas or lamplight without any harmful effect on the prints. The prints are first washed in repeated changes of water, until no traces of silver are noticeable in the water which falls from them when held out of the water. The toning bath having been prepared to suit the user's fancy, the prints are then placed singly into it face downwards, until the whole are lying in a heap in the toning dish. Then remove the bottom print and lay it on the top. Repeat this with each print, examining each one to see when toning is complete. As each print is finished, place in a dish of clean water containing a little salt, which will prevent any further toning. Then prepare the fixing bath by dissolving 3 oz. hypo in 20 oz. water, adding a few drops of ammonia. Here the prints are treated in the same way as in the toning bath, for about twenty minutes. They are then taken out and placed in a vessel so as to be washed to remove the hypo. As permanency depends upon the thoroughness of this washing, it requires great care. Either a washer may be used which provides for a constant change of water, or else any ordinary tub or mug may

be used, the water being changed every half hour for several hours. Care should be taken that the prints are not allowed to lie in a heap at the bottom. After washing and drying they are ready for mounting.

SEÑOR.

**Question 12.**—What may be the causes of metallic or iridescent deposit on the negative?

**ANSWER.**—The deposit may be caused by (1) imperfect filtration of the emulsion; (2) by too much alkali in the developer; (3) by the use of dirty developing dishes.—LENS.

**ANSWER.**—This is chiefly due to errors in manufacture, and is usually designated chemical fog. It may be caused by the emulsion containing silver nitrate in excess, or by decomposition of the gelatine through over-boiling. It is almost sure to make its appearance in plates prepared by ammonia method of emulsion making, especially if the plates have been kept for a few months. It is often seen when the plates are developed with ammonia, very seldom met with in ferrous oxalate, and not at all likely to appear with soda and potass. When it is known that a particular brand of plates is liable to this defect, the following developer is the best to use:—

| A.               |     |     |     |     |     |     |     |   |     |
|------------------|-----|-----|-----|-----|-----|-----|-----|---|-----|
| Sulphite of soda | ... | ... | ... | ... | ... | ... | ... | 4 | oz. |
| Sulphuric acid   | ... | ... | ... | ... | ... | ... | ... | 1 | "   |
| Pyrogallol acid  | ... | ... | ... | ... | ... | ... | ... | 1 | "   |
| Water            | ... | ... | ... | ... | ... | ... | ... | 4 | "   |
| B.               |     |     |     |     |     |     |     |   |     |
| Carbonate potash | ... | ... | ... | ... | ... | ... | ... | 3 | oz. |
| Sulphite of soda | ... | ... | ... | ... | ... | ... | ... | 2 | "   |
| Water            | ... | ... | ... | ... | ... | ... | ... | 7 | "   |

One drim. of A and  $\frac{3}{4}$  drim. of B to each ounce of water.—STEPHAN.

### QUESTIONS.

22.—What is the difference between bi-carbonate and carbonate of soda, sulphite and sulphate of soda?

23.—Explain the principles of carbon printing.

21.—How would you mark a lantern slide?

*Latest Day for Answers, March 7th.*

25.—How would you copy a black and white drawing? Send an example of your work.

26.—How would you tone a print with platinum?

27.—Forward a lantern slide from one of your own negatives.

*Latest Day for Answers, March 14th.*

### RULES.

1. Answers must be received on the date stated each week in the AMATEUR PHOTOGRAPHER.

2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A *nom de plume* may be used, and must follow every answer, and be affixed to every specimen of practical work.

4. Answers are not limited in length, but preference will be given to concise answers without unnecessary amplification.

5. Those desirous of competing must apply to have their names entered. As these examinations are intended to encourage the study of the theory and practice of photography, authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

6. Past successful candidates will not be allowed to compete.

**NOTE.**—No information of any kind will be given to competitors, and nothing but the answers must be included for the examiners. All other communications must be addressed to the Editor.

Marks will be given for all answers, and, when possible, the best three answers will be published. The answer will not be published till the week following receipt of the same, and the examiners criticise each answer sent in, and when no satisfactory answer is received, will supply one. Three prizes will be awarded at the end of each quarter. (Full syllabus on application.)

All communications to be addressed:—"EXAMINATION DEPARTMENT," AMATEUR PHOTOGRAPHER, 1, CREED LANE, LONDON, E.C.

**Richmond.**—At the meeting on the 26th ult. Mr. Cambrano presided. The delegates (Messrs. Cambrano and Ramsay) appointed in connection with the Photographic Society of Great Britain Affiliation Scheme, reported what had occurred at the meeting on the 15th ult. Sample packets of their new rapid bromide paper having been forwarded by the Eastman Company, and distributed amongst the members at a previous meeting, Mr. Davis showed some results he had obtained with it, comprising a contact print (3 sec. exposure at 12 in., from gas flame) and an enlargement of a minute portion of the same negative to half-plate size, about 9 $\frac{1}{2}$  diameters. An alteration in the programme was made by the substitution for the subject announced ("Finishing in Monochrome") of a demonstration by Messrs. Hill of their invention "Cresco Fylma." The properties and capabilities of the mysterious solution were very clearly explained by Mr. Hill, jun., and his brother then proceeded to carry out a series of experiments, while specimens of the work showing films, positive and negative, enlarged and transferred to paper, opal, glass, etc., were handed round. The experiments were completely successful, and the process was much admired for its simplicity and the apparent certainty in the results.



## Exhibitions.

### ROTHERHAM PHOTOGRAPHIC SOCIETY.

THE third annual exhibition of the members of this society was held in St. George's Hall, Rotherham, on Tuesday and Wednesday in last week, and proved most successful. The year's work, as represented by the 360 prints on the walls, revealed considerable technical progress, while from an art standpoint there had been some little advance made. Very excellent results were displayed, principally in bromide and albumenised paper. The chloride paper seemed to be gaining ground, while Alpha and the ferro-prussiate methods had their followers. So far none of the members appear to have taken up platinotype printing. Landscapes were very largely in evidence, while architecture (interior and exterior) was not extensively represented. There were practically no portraits or enlargements, and only one floral study.

The exhibitors were Dr. Baldwin (President), Mr. E. Isle Hubbard, Mr. W. H. Haywood, Mr. G. T. M. Rackstraw (Vice-President), Mr. H. C. Hemmingway (Hon. Secretary), Mr. J. Leadbeater (Treasurer), Mr. W. Mason, Mr. W. H. Shephard, Mr. J. W. Whittington, Mr. J. Caseldine, Mr. T. W. Mosby, Mr. F. W. Barwick, Mr. John Clarke, and Mr. J. Sykes. Hand-camera work, which, by the way, seems to be becoming a feature of the society's efforts, was shown by Mr. Rackstraw, Mr. Hemmingway, and Mr. Clarke.

The Sheffield Photographic Society—which has always shown a warm interest in the welfare of its near neighbour—lent several exhibits.

There were some choice platinotypes by Mr. Ernest Beck (prize medallist); Mr. T. G. Hibbert had on view several sea pieces and landscapes in which some particularly fine cloud effects were noticeable; and Mr. Crowther had sent a number of picturesque examples. Mr. A. H. D. Acland, M.P. for Rotherham Division, had forwarded half a dozen framed photographs of small size but of much merit. Mr. Acland was a member of the Photographic Society, Christ Church, Oxford. There was a fairly large collection of choice reproductions contributed by the Autotype Company.

Other exhibitors were the Eastman Materials Co., London; the Fry Manufacturing Co., London; Messrs. Elliott and Son, Barnet; the Britannia Co., Ilford; Mr. J. Crosby, Rotherham; and Mr. J. Leadbeater, Rotherham. Miss Crossley, of Maltby, as an amateur, sent several whole-plate prints, pleasingly executed. The portrait work of Mr. Crosby was much admired, as were also the fine examples from the other firms named. Mr. Leadbeater's photo-micrographs were a source of much interest. During each evening there was a musical programme, especial service being rendered by Mr. E. Cooper's orchestral band. There was also a short lantern entertainment, in charge of Mr. Leadbeater, the chief slides being a series lent by the Fry Manufacturing Co., from slides made from negatives of the late Mr. Rejlander.

### COLCHESTER CAMERA CLUB.

On February 24th the members held their annual soirée at the Shaftesbury Hotel. The work of the past year, including specimens of all branches of art, by camera, pen, and pencil, contributed by members and others, was tastefully arranged about the room, and these interesting exhibits added greatly to the success of the gathering. The principal exhibits were as follows:—

Mr. W. Duddell: Twelve opals in carbon, six prints on silk, eighteen lantern slides, and eighteen prints of holiday work. Mr. A. Weddell: Six bromide enlargements from negatives of the Colchester Camp and the Colchester Gasworks in 1860, and several views in the Isle of Arran. Mr. C. E. Benham: Album of sketches in silver point, crayon, pencil, and sepia, and specimens of cohesion figures and magnetic curves. Mr. J. C. Shenstone: Twelve prints and whole-plate views in frames of the Thames and Layer Marney, and the neighbourhood of Colchester. Also a large print (silver) of a group taken by flash light. Mr. H. Lazell: Seventeen quarter-plate platinotypes and enlargements. Captain W. Morrison, of the Army Medical Staff: Seventy slide views of scenery, temples, and illustrations of Ceylon, an album of Ceylon views, a quantity of steel work from the West Indies, an album of Devonshire views, case of shells and seeds, specimen of lace bark tree, sample of petrified logwood, etc. Mr. W. Wright: Three frames and thirty quarter-plate platinotypes. Mr. F. T. Snell: Three photographs. The Rev. C. L. Acland

sent an album of portraits, groups and views in Shetland, and also some curious Burmese pictures. Mr. E. C. Hocking: Four silver prints, one of Layer Marney Towers. Mr. W. Buck sent two books of clever snap shots with the Luzo hand-camera and several paintings. Mr. G. W. Baskett: Portraits taken by the flash light. Gen. Montagu sent several pictures, including photographs of Duke of Teck and Princess May, and of the Duke of Clarence, taken by the Royal Engineers on his visit to Colchester. Mr. Geo. Joslin: Album of diagrams in sympalmography and album of bromides.

The room was embellished with plants, etc., whilst a screen, on which were thrown the lantern views, was erected on the platform. During the evening the Secretary (Mr. H. Wright) read the report, which stated that the Club was in a flourishing state, both numerically and financially, and thanking the Rev. E. Ledger, Mr. C. E. Benham, Mr. H. M. Smith, and Mr. G. W. Baskett for their assistance at lectures. All the officers were re-elected. During the evening a capital programme of music was given, and a series of lantern slides were shown, Mr. G. W. Baskett manipulating the lantern.

### PAISLEY PHOTOGRAPHIC SOCIETY.

The sixth annual exhibition was opened on the 23rd ult. in the Picture Gallery of the Museum Buildings by a conversazione, which was attended by an unusually large number of ladies and gentlemen. The frames were hung along the east and north walls, and comprised some very capable and interesting work, which attracted considerable attention from the visitors. Besides the competitive pictures, a number of members have lent exhibits which were conspicuous in the gallery. Following are the results of the competitions:—Landscapes: (1) Matthew Morrison (President); (2) James Mure. Architecture: (1) James Mure; (2) Alexander Thomson. Portraits: No first; (2) James Donald, jun. Photographs taken during Saturday excursions: (1) Alexander Thomson; (2) Thomas Rastall. Instantaneous: Alexander Thomson. Copies of Engravings: (1) James Barr; (2) David B. Jack. The judges were:—Messrs. Wm. B. Smith, Glasgow; John Morrison, jun., President of the Glasgow Amateur Photographic Society; and John Fullerton, Paisley. The exhibition is regarded as an advance on previous ones.

### ASHTON-UNDER-LYNE PHOTOGRAPHIC SOCIETY.

The exhibition of this society was opened by Dr. Hamilton on the 16th ult., in the presence of a large audience. The President (Dr. Hamilton) shows a number of Swiss views, all of them enlargements, except four, from quarter-plate negatives. There were two cloud studies, and two views of the castle of Valleria, in Switzerland. There is also an enlargement of Moreton Old Hall, and another of Antwerp Cathedral. The Swiss views were "Lausanne," "Meiringen," "Rosenlani Glacier," "Stalden," "Brieg," etc. In all these pictures a beautiful tone has been obtained, showing great care and skill in manipulation and the selection of materials. Mr. Lord is only a recent beginner, and his success shows what wonders can be done in a very short time by a man of artistic taste who applies himself with diligence to photography. His picture of "Valeria and the Valley of the Rhone" deserves special attention. Among Mr. Lord's fine pictures are the "Valley of Lauterbrunnen," "Sunrise on the Viescherhorn, Grindelwald," and view of the "Suspension Bridge, Frieberg." Of Mr. J. W. Kenworthy's collection, the most conspicuous is a new picture styled "Among the Potatoes." Two ploughs are engaged in the corner of a field banking up potatoes. The horses are triumphs of art. They stand in the furrows while the tired ploughmen are snatching a little refreshment which a girl has evidently brought in a basket on her arm. In advance of the horses, but a little to the far side of them, are two men stopping down, with shovels in their hands. Among other views by Mr. Kenworthy is one showing cloud effects on the Mediterranean, with which he gained a bronze medal at the recent exhibition at Brussels. "Buar Brae Glacier, Norway," is an enlargement of one of Mr. Kenworthy's latest series of views. The frozen snow looks really like snow, not like cotton wool, as is generally the result of unskillful treatment of such a difficult subject. Among other views by Mr. Kenworthy are: "Ship in Mid-sea," platinotype scenes in Norway, Switzerland, France, Wales, and Warwickshire. "Gawsworth Hall;" "Sheep Studies," taken at the bottom of Llanberis Pass; autotype enlargement of a view of Patras; "Frenchwoman at a Spinning Wheel, Guy's Cliffe;" enlargement of Mr. Mason's yacht, taken off Carnarvon; "Cottage and Mill." Finally, we may mention the great prize-winner, "Cows in the Shallows." Mr. Thomas Glazebrook shows his views of Moreton Hall; "Eventide," taken in North Wales; "The Love Letter"—two girls in a harvest field reading the letter, with some bundles of new cut grain behind them, a young man acting as eavesdropper behind, a third girl in the sulks sitting apart—very well composed indeed; "What Does the Fish Weigh?" "The Old Story;" "Cloud Studies" on the



Welsh coast; "The Playground of the Sea;" "A Breezy Afternoon"—prize picture of the AMATEUR PHOTOGRAPHER; "Quiet Evening," Windermere; "Sunshine and Shadow;" Gawsforth Hall; "Clouds," which took the second prize at Liverpool International; "Studies of Cockle Gatherers," intensely weird and curious, one took the second prize as a lantern slide in London; "Still Waters," a fine production; "Pike Fishing" in Cheshire; "The Gleaner," and "Idle Moments." Mr. G. R. Candelet exhibits a number of splendid bromide enlargements, some 36 in. by 28 in., and others 17 in. by 22 in. The best of the large ones is named "Gwendoline," the little daughter of the artist. "Kenilworth Castle" is another excellent picture, taken from an unusual standpoint. In his view of "Conway Castle"—the most photographed object in England—Mr. Candelet has refrained from reproducing the well-known frontage, which nearly every man with a camera and an excursion ticket has gone through the experience of taking. "The Beeches," with the shiny metallic-looking bark of their grand trunks, form a very striking picture. Mr. W. Chadwick shows a scene on the old road near Broadbottom, and a quaint farmhouse, bridge, and stream, "On the Goyt, Derbyshire;" "Tintern Abbey," interior and exterior; "Chepstow Castle," "Views on the Wye," one of them showing a capital likeness of Mr. Thomas Glazebrook in the stern of a boat; also a "Snow Scene from the Park," and an interior of the "Council Chamber, Ashton." Mr. Dean, the Secretary of the Ashton Association, exhibits a 36 in. by 28 in. enlargement of an old-world street in Warwick, very attractive in its unique features. He also exhibits a case of three half-plate bromides giving views of the same street scene, of the Suspension Bridge at Chester, and of Mottram Church. Mr. Tulloch Cheyne's "Visit to Belle Vue" has been productive of a number of characteristic pictures enclosed in one frame. The Polar bear taking its lazy snooze on its side is capital, as is also the pose of another creature of the same genus, which is holding itself up in sitting posture, as if deliberating what the camerist and camera are about. Mr. J. F. Tipping has some views of Whalley Abbey, examples of "naturalistic" photography. Mr. J. T. Lees, President of the Dukinfield Photographic Society, gives views from Monte Carlo, showing the famous gaming tables where so much money has been won and lost; and the theatre—both rooms, of course, empty, swept, and garnished, without the spirits which ordinarily haunt them. W. Crooke, of Edinburgh, shows a profile life-size portrait of Paderewski, the pianist. The portrait of an old gentleman is magnificent. The half-length portrait of a Highlander is another equally admirable picture. All of these have been taken "direct." In the same neighbourhood are some interesting pictures in light and shade, effected by means of the flash-light. One of these, of singular beauty, represents two ladies standing in front of a fire, with the concealed light playing about the outline of their figures, while the rest is obscured in dark shadow. W. Lamond Howie, of Edinburgh, exhibited, among other pictures, a panoramic one of remarkable merit, taken in two sections, showing a deer forest at Balmoral. W. Wade, President of the Manchester County Photographic Society, an old medallist and a lover of architecture—an architect by profession—showed "At the Fountain," which took a prize at Leeds. Kidson Taylor showed four photographs in a warm brown tone. G. W. Wilson, of Aberdeen, exhibits a number of seascapes and yachts. A breaking wave flying over a pierhead is a very striking picture. Karl Greger has eight fine little pastoral pictures. A. Horsley Hinton fine landscapes, "Salt Marshes, Essex," "By Reedy Ways," "The Evening Ebb," Walter D. Welford, "Scotch Trawlers," an instantaneous photo; balloon ascent, skating, swimmer, a swingboat—all good. Lyd. Sawyer, of Newcastle, exhibits "On their Own Hooks," a number of lads fishing; "In the Twilight," a pastoral scene, and "Crewel Work," a humorous domestic scene, repay the minutest inspection, and grow in one's esteem the more they are looked at. "The Toper" is not excelled by anything in the exhibition for the artful manner in which the concealed light behind the ale mug irradiates the long "churchwarden" pipe stem, the boozy features and the drowsy eyelids of the snoozing drunkard, whom one almost expects to see dropping forward on the table and spoiling the whole show. J. Gale, of London, exhibits "Sleepy Hollow," which won a gold medal at Liverpool, and a number of other small pictures in platinotype, which are all gems in their way. Mr. Walter Leigh has a great variety of views from Conway and neighbourhood. Winter, of Derby, shows some very good portraits of men and women. These are among the most excellent things of the exhibition. They are placed side by side with Crooke's productions, and challenge comparison. Keene, of Derby, exhibits six platinotypes of Derbyshire churches. These are remarkable works, one of which gained the silver medal at Newcastle-on-Tyne. Byrne, of Richmond, sent two life-sized portraits, both taken direct. Annan and Son, of Glasgow, exhibit fine photographs of prints employed in the illustration of books. Van der Weyde, of London, sends a number of pictures in a large frame, and a great enlargement of one of the smaller pictures. Among the pictures were: A procession of ladies and gentlemen going to supper in old fashion;

an impersonation of Mark Antony; and four ladies taken by electric light. In the supper room the Rev. H. J. Palmer has to himself a special method of exhibition. He shows his photographs as transparencies in a compact square, with a brilliant lamp in the centre. Mr. Palmer's views are from the cathedrals of France, and Swiss and Alpine views. Mr. Palmer's reputation as a photographer is world-wide, and has been honestly gained by good and sound work. Sutcliffe, of Whitby, shows a number of charming photographs. He succeeds in a faithful reproduction of figure subjects. Mrs. Moss, of Ashton, exhibits in the same room a considerable number of photographic portraits, in which she has acquired a good reputation. All her work is exceedingly creditable. Stereoscopic photography, after falling into some degree of neglect, is evidently coming forward somewhat prominently. Ashton has, in this respect, been well to the fore, two of its photographers having in succession won gold medals—the last having been gained by Mr. Charles Lord. Mr. Kenworthy, Dr. Hamilton, and Mr. Charles Lord each showed in their large stereoscopes a long series of most striking views. In the supper room were exhibited about 110 pictures entered for the prizes offered by the AMATEUR PHOTOGRAPHER. The pictures by the members of the Ashton Society are regarded as equal in merit to anything shown in this part of the exhibition. Lectures, illustrated by lantern slides, were given by Mr. G. E. Thompson, on "The Stone Age of the Passion Play at the Italian Lakes;" by Mr. Paul Lange, on "Iceland;" by Mr. R. B. Wilson, on "Picturesque New Zealand;" by Mr. F. Clibborn, on "Italian Highways and Byeways;" and by Mr. J. W. Wade, on "Holidays with the Camera."

## Societies' Meetings.

**Aberdeenshire.**—The usual monthly meeting was held on 23rd ult., the President in the chair, Messrs. Pardy, Hawes and Gibb were elected members. Mr. Wm. Reid then proceeded to give a paper on "Copying," more especially dealing with the preparation of lantern slides from large size photographs. An animated discussion followed, and the meeting terminated.

**Barrow.**—A meeting was held on the 18th ult., when a paper was read by Mr. R. Spencer, F.C.S., M.S.A., on "Silver Salts," illustrated with experiments. In the first place he defined a salt, and showed how every salt is a combination of an acid and a base. The chloride of silver was precipitated from the photographer's residue, and this, after being dried and fused with carbonate of soda, to metallic silver, under the blow-pipe or charcoal. The metallic silver thus obtained was then dissolved in nitric acid, and the nitrate of silver—a salt which can be crystallised, the crystals being soluble in distilled water. From a solution of the nitrate, the haloid salts of silver, viz., chloride, bromide, and iodide, were prepared. The chemical properties of these were pointed out, and their solubility in hyposulphite of soda and cyanide of potassium was shown; it was stated these are the salts most sensitive to light, and are used on the films and printing out papers. An emulsion was prepared as follows:—Strips of gelatine were dissolved in warm water, to which solutions of nitrate of silver and potassium bromide were added, this forming a yellowish-white bromide of silver, distributed in a finely divided state in the gelatine. This emulsion, after being allowed to cool and solidify, only required to be cut into small pieces and washed in cold water to be ready for making an ordinary dry plate, the only thing necessary to be done being to re-melt the gelatine bromide emulsion with a gentle heat, and to flow it evenly in a thin layer on a chemically clean glass plate to form an ordinary dry plate.

**Camera Club.**—On the 25th ult. Mr. J. B. B. Wellington exhibited his series of slides illustrating a tour in Norway. Captain Abney occupied the chair. After Mr. Wellington's lecture a miscellaneous set of fine lantern pictures by the same gentleman followed, and other slides were shown by Messrs. Urquhart, Hansard, Barton, and Scott.

**Canterbury.**—On 17th ult. the members gave their first lantern slide exhibition. The Rev. T. Field presided. In addition to slides done by the members, an interesting series of American views, the work of American amateurs, were shown.

**Coventry.**—On 21st ult. a set of slides sent over by the American International Lantern Slide exchange, illustrative of typical scenery and life, was exhibited by means of the optical lantern, with lime-light, to a good number of members, ladies and gentlemen, and their friends. The views were very good and much appreciated. Mr. A. B. Clarke read the descriptive lecture, after which several fine views of local scenery were shown by Messrs. Reynolds, Orton, and Owen, and were much admired. The lantern was manipulated by the Hon. Sec., Mr. Thos. W. Owen, Earlsdon.

**Croydon.**—Meeting on the 26th ult. (lantern night), Mr. Edward Lovett, President, in the chair. The Incandescent Gas Light Co. demonstrated the use of their light as adapted to the optical lantern. One hundred and fifty slides, the work of the members, were passed through the club lantern during the evening.



**Cornish.**—Meeting on the 23rd ult.: Mr. A. H. Teague read a paper dealing with the art side of photography, at the end of which there was a lively discussion amongst the members.

**Devon and Cornwall.**—Captain Castle, R.N., on 22nd ult., delivered the second part of his lecture on "Pacific Pictures." The lecturer narrated in an exceedingly interesting manner the chief incidents which befell him and the principal places and personages he saw during an official cruise in the Pacific Ocean. Choice views of Sydney and some of its magnificent buildings and sights were depicted on a screen by the aid of a powerful lantern, and amongst numerous other illustrations were those of the New Hebrides, Tonga, Australian aborigines, and views of memorable shipwrecks at Samoa.

**Dewsbury.**—On the 25th ult. Mr. S. C. Hepworth presided. Mr. Howson, of the Ilford Co., London, showed some splendid slides in the lantern, one of them, flowers in a jug taken on an Isochromatic plate, was lovely, being a rich tone, and the petals standing out distinctly. He pointed out the great use of Isochromatic plates on many occasions and for many subjects; also showed by experiment the contrast when using Isochromatic plates and ordinary plates, printing from a negative with various coloured glass before the negative. The Ilford Company have brought out a plan of using a piece of yellow glass inside the camera, a yellow screen, which was shown to be of great service in rendering the proper gradation in a landscape; the exposure had to be lengthened to three times as long. Specimens of the printing-out paper were shown with various tones and finishes, Captain Abney and other eminent men have spoken in high praise of it. The price is about the same as ordinary silver paper, the size being larger and better adapted for cutting out, without so much waste as in the common silver paper. The P. O. P. is 17 by 2½, and will give sixteen full cabinets, 6½ by 4½, whereas the old paper is only 17½ by 22. The P. O. P. will keep better, tones quicker, and is free from many faults so common in albumen papers.

**East London.**—Ordinary meeting held on 23rd ult., Mr. C. Tylee in the chair. It was proposed and carried that Rule 5, which states "annual general meeting to be held in April," be amended to "annual general meeting to be held in February." This has been done with the idea of enabling the new council to have the dates of outings, etc., fixed well before the season commences. After this preliminary business the members were favoured with a very able and interesting practical demonstration of "Enlarging" by the Hon. Secretary. Mr. Wilkinson proceeded from a quarter-plate negative to enlarge a portrait to 12½ by 10½. This he did by the aid of his enlarging apparatus, Ilford rapid bromide paper, and ferrous oxalate developer. The result was announced by a critical audience to be an unqualified success. It was extremely gratifying to notice that this meeting was the largest on record in connection with this young society, nearly the whole of the working members being present.

**Edinburgh.**—The second popular meeting was held on the 24th ult., when about 200 slides, the work of members, principally from their negatives taken during last season, were thrown upon the screen. Many of the slides were of great excellence, though one or two showed that all the members were not quite up to making a successful picture for the lantern. Among the best may be mentioned one of Largo Bay by Mr. James Patrick, in which the clouds were very finely rendered; some figure subjects by Mr. Hugh Prebner, some views in Belgium by Mr. J. Stewart-Smith, two or three by Mr. H. J. Blanc (President), and a number of very fine animal subjects by Mr. C. Reid. The "populars" are given by the society free to the members and their friends. About 800 persons were present, and evidently appreciated the treat provided, only it is rather a pity that a small number of young people made their presence in the hall too prominently manifest. The time has now passed when a lantern exhibition such as was given on Wednesday should be considered merely as an amusement for youngsters.

**Glasgow High School.**—The society met on the 23rd ult., Mr. Muir (President) in the chair. Mr. Laird proceeded to demonstrate the new "Cresco-Fylma" process. Messrs. Muir and Weir then enlarged from a quarter-plate negative, by means of the lantern, the print being taken on Eastman bromide paper.

**Hackney.**—The ordinary meeting was held on the 25th ult., Mr. W. Wilson in the chair. The Secretary announced that several new books had been added to the library. A member asked for a good developer. Mr. Hudson gave the following:—(A) Hot water, 2 oz.; sulphite soda, 4 oz.; eikonogen, 400 gr.; quinol, 200 gr.; water, to 20 oz. (B) Hot water, 20 oz.; carbonate potash, 2 oz.; carbonate soda, 2 oz.; water, to 32 oz. For instantaneous work, 1 oz. A, 1 oz. B, and 3 oz. water. Landscape work, 1 oz. A, ¾ oz. B, 4 oz. water. A question was asked whether the surveyor of a district would have any voice in the erection of a studio. Mr. Capel said he would not, if eight feet from highway and fifteen feet from adjoining property. He said that if four small wheels were put on the erection, it would obviate any difficulty in the matter. The chairman then introduced Mr. A. L. Henderson, and prefaced the introduction by passing a high eulogium on Mr. Henderson for his work in years past. Mr.

Henderson gave an excellent lantern lecture on the Riviera, illustrating the subject with some capital slides, many being of a panoramic nature. Some 200 slides were put through by the Hon. Sec., in response to Mr. Henderson's "Pass on, please."

**High Barnet (Elizabethan).**—At the annual general meeting held on the 16th ult., the following were elected officers of the society for the ensuing year:—President, Rev. J. B. Lee; Vice-Presidents, F. Samuels, H. W. Milne, L. Matthews; Hon. Treasurer, G. W. N. Harrison; Committee, W. Baddeley, H. Imray, L. Medland, W. H. Ottaway; Hon. Secretary, H. E. Kingsford.

**Huddersfield.**—At an ordinary meeting held on the 25th ult., Mr. T. K. Mellor in the chair, about 200 slides of members were passed through the lantern, which Mr. A. Clarke kindly operated.

**Ireland.**—The technical meeting was held on the 25th ult., Mr. M. Hedley in the chair. A very interesting demonstration of enlarging by artificial light was given by Mr. R. M. Inglis, who enlarged a quarter-plate picture to 15 by 12, on Eastman bromide paper, and developed it before the members. Mr. Inglis advocated the use of a piece of ground-glass let into the focussing board flush with its surface, and the picture to be viewed from behind. He also stated that he obtained finer results by using a stop while focussing; he generally used f/22. He also explained to the members how to enlarge by daylight in the society's dark-room, in which a new enlarging arrangement had recently been made for use with members' own cameras. The demonstration excited a good deal of discussion, in which most of those present joined.

**Leith.**—The fourth annual lantern exhibition was held on 22nd ult. Upwards of 170 slides were exhibited, the work of eighteen members, and passed the ordeal of public scrutiny creditably to the members and the Association. Mr. W. M. Smith, Vice-president, occupied the chair, and the audience numbered fully 800. During the course of the evening vocal and instrumental music was rendered. Mr. W. F. Hendrie skilfully manipulated the lantern, while Mr. Robt. Hunter described the pictures as they were projected on to a fifteen foot screen.

**Liverpool.**—The meeting was held on the 25th ult. The President (Mr. Wm. Tomkinson) took the chair. Ten new members were unanimously elected. The President made a statement with reference to the new club-rooms, and asked for suggestions regarding excursions during the coming season. Mr. Fred Clibborn then gave his new lecture entitled "Two in Touraine," illustrated by slides made by Mr. G. E. Thompson from photographs taken by him during a recent tour of the two gentlemen in France. The lecture was delivered in Mr. Clibborn's well-known racy style, which, whilst conveying valuable and interesting information, keeps the audience constantly amused by his exhaustless fund of dry humour. The photographs, which embraced excellent views of the principal chateaux and churches of France, were all of that high order and pleasing variety of tone for which Mr. Thompson is noted.

**Louth.**—The annual meeting was held on the 23rd ult. Mr. Clarence James was voted to the chair, and there was a fair attendance of members, considering counter-attractions and the inclement state of the weather. A letter was read from Mrs. W. G. Smyth expressing her regret at being unable to attend. The Secretary, Mr. S. F. Clarke, read the annual report and statement of accounts, which were unanimously adopted. The Secretary then announced the following officers for the ensuing year, there being no contest, as the required number were only nominated:—President, W. G. Smyth, Esq.; Hon. Sec. and Treasurer, Mr. S. Francis Clarke; Assistant Hon. Sec., Mr. Herbert C. Bentley; Committee, Col. Ranshaw, Rev. J. M. Coates, Capt. Fowler, Messrs. H. S. Forman, C. James, and W. Shephard. The Chairman stated that Mrs. Clarke had secured two first awards in an exhibition at Darlington in the only two open classes, and this news was heartily received and Mrs. Clarke received the congratulations of the members' on her success. The remainder of the evening was spent in viewing the exhibition prize pictures "Holiday with the Camera" competition.

**Munster.**—A meeting was held on 24th ult. Major Lysaght occupied the chair. Amongst those present were—Messrs. H. N. Noblett, P. Foley, H.C., J. M. Long, A. Newsom, J. C. Newsom, W. Baker, T. Mahoney, J.P., D. Franklin, J.P. (hon. sec.), R. Dalton, W. Carter, H. Lund, C. McCarthy. The first part of the business of the evening was devoted to an extremely instructive demonstration by Mr. Lund of the theory of light in general, and the most effective method of taking photographs by the magnesium flash-light, after which the audience were photographed by that light. Major Lysaght next exhibited a number of photographs taken by the Boston Camera Club by the aid of limelight.

**Newcastle-on-Tyne.**—A special meeting called to discuss and vote upon the scheme proposed by the New Premises Sub-Committee was held on the 25th ult., the President, Mr. A. S. Stevenson, J.P., in the chair. There was an attendance of about sixty members. The scheme, which since last meeting has undergone some modifications, was recommended by the council, and, on the motion of the chairman, was carried enthusiastically. Mr. C. E. Barkas, the



lessee of the Art Gallery, is to provide a commodious room for weekly or fortnightly meetings, and two or more dark-rooms with all conveniences, and to allow the Association the use of the lecture theatre for lantern shows, etc. The necessary alterations will be completed in September, when the Association will then enter into possession, and on January 1st, 1893, the annual subscription will be raised to 10s. 6d., and the entrance fee abolished.

**Putney.**—On the 27th ult., Rev. L. Macdonald in the chair, a short paper on "Exposure" was read by Dr. J. F. Farrar, who confined his remarks mainly to the principles of light: its effect upon the dry-plate, and the remarkable investigations of Messrs. Hurter and Driffield, illustrating the conclusions of these gentlemen by numerous carefully prepared slides. The Decondon and Watkin exposure meters, and Messrs. Hurter and Driffield's actinograph, kindly supplied by Messrs. Marion, were exhibited and explained. The spectrum was thrown upon the screen by means of a bisulphide of carbon prism and attachments, lent by Messrs. Taylor, Taylor, and Hobson, to whose courtesy the society is again indebted. A set of prize slides were then shown, and appreciated to the full, the flower studies, among others, receiving special commendation. There was a capital attendance, the presence of an unusual number of ladies being noteworthy. Mr. W. Resbury Few was elected a member.

**Sheffield Optical.**—The annual meeting was held on the 18th ult. Among other business transacted during the evening was the passing of an unanimous vote of thanks to the officers for their services during the past year, and the election of others for the ensuing year as follows, viz.:—President, Mr. E. J. Draper. Vice-Presidents, Mr. J. T. Frith, and Mr. J. Clowes. Treasurer, Mr. A. Copley. Committee, Messrs. Staniforth, Allen, Maelaurin, Platts, Baker, Whittington, Simpson, and Temperton. Secretary, Mr. J. S. Stephens, 6, Sheaf Gardens Terrace, Sheffield.

**Shropshire.**—This club gave its annual lantern entertainment on 24th ult., to a very large audience, presided over by the Mayor (E. C. Peele, Esq.), who, in opening the proceedings, explained the pleasure he felt in being present that evening, having himself occupied the presidential chair of the club on its first foundation some few years since. Mr. J. R. Greatorox (also a past president) attended and manipulated his splendid lime light apparatus, and to his valuable aid and success in this respect the club and audience are somewhat indebted. Mr. F. W. Williams, with his usual courtesy, in a chatty and suitable style, described the slides as they were thrown on the screen. In the interval, vocal and instrumental music was given. The exhibition opened with slides representing portraits, prepared from photographs, of the Mayor and Mayoress, by Mr. Naunton, followed by a selection kindly lent by Messrs. Valentine and the Woodburytype Company, illustrating scenes in Jamaica, Switzerland, Venice, etc., continued by a beautiful series by Mr. F. J. Cembrano, consisting of very fine examples of Moorish architecture, together with charming scenes of the Alhambra, which may be considered almost unique. The members' work then commenced by a contribution of some fifty slides from Mr. Greatorox, consisting of winter, moonlight, landscape, and river scenes. Mr. Franklin sent an interesting series of Eastern views, and the examples from the two lady members (Mrs. Colville and Mrs. Naunton) were highly creditable; Messrs. Preece, Della Porta, Irwin, and Heath sent good and highly creditable selections. Some good and effective slides were contributed by Messrs. W. E. Harding, Forrest, Alitree Barson, Byolin, and R. A. Budnium. The contributions sent by Mr. W. W. Naunton and Mr. M. J. Harding consisted of some exceedingly interesting examples of architecture, river and landscape scenery; whilst some of Mr. Harding's productions were singularly effective and beautiful in the rendering of atmospheric effects. "The Fairy Glen," "Swallow Falls," "Swans in Prior Park" (very fine), and "Sunset" were also among some of his gems as slides.

**Sunderland.**—The usual monthly meeting was held on the 22nd ult., Mr. Broderick in the chair. Two new members were elected. The Treasurer reported that he had collected 30s. towards the Maddox testimonial fund. The Secretary read the report of the sub-committee appointed for carrying out the arrangements for the entertainment in aid of the Royal National Lifeboat Institution, which was held on January 27th, the amount raised, after paying all expenses, being between £27 and £28. Mr. H. G. Ridgway gave an exhibition of an exceedingly fine collection of his own slides by means of the limelight lantern. The views comprised a trip down the Thames, Lake district, Derbyshire, Scotland, etc., and were much admired by the members present.

**West Kent.**—An ordinary meeting was held on the 26th ult. The President and Vice-President being absent, Mr. John Taylor was elected to the chair. Mr. Clare gave a most interesting demonstration with his Optimus enlarging apparatus, using a 9-inch condenser and a 3-wick lamp, making several successful enlargements from half-plate to 12 by 10. His apparatus and method of working were much admired by the members.

**West London.**—Ordinary meeting 26th ult., the President in the chair. Seven candidates were proposed for election. Lantern evening. Slides shown by Messrs. Lewis, Kellow, Bilton, Dixon, Hodges, H. Selby, Seantlebury, Stein, Blizard, Whitear, and J. D. England. Mr. England exhibited, side by side, celluloid and glass slides, to show the difficulty of distinguishing one from the other, and explained that the celluloid slides were mounted in Mr. Seanlan's metal film holder.

**Wigan.**—At the meeting on the 24th ult. Mr. E. M. Tunstall gave a demonstration on "Lantern Slide Making," which was watched with interest by a fair number of members. Before proceeding with the practical work of the evening, Mr. Tunstall gave his experience of the various brands of lantern plates on the market. Several plates were then exposed behind negatives of varying qualities to magnesium ribbon, excellent slides being the result in each case. His methods of printing clouds on to another plate to be used as a cover glass, and getting rid of defective skies by the aid of the ferricyanide and hypo reducer were then shown, after which he proceeded to finish off a slide by combining the two together, the landscape on one, and sky on the other. There were also on exhibition a frame of magnificent slides, the work of Mr. Tunstall, and a lantern mask cutting table, which enables amateurs to cut their own masks with a minimum of trouble. The Secretary distributed samples of the new Eastman rapid bromide paper.

### SOCIETIES' FIXTURES.

March 3.—**COVENTRY.**—Ordinary.

" 3.—**CAMERA CLUB.**—A complete demonstration of the Carbon Process, by Autotype Co.

" 3.—**SOUTH HORNSEY.**—"Lantern Slide-making," by Hudson.

" 3.—**LONDON AND PROVINCIAL.**—"A New Enlarging Lantern without Condensers," by H. S. Fry.

" 3.—**ASHTON-UNDER-LYNE.**—"Kallitype," by Mr. G. R. Candelet.

" 3.—**LEIGH.**—"The Lantern," by Mr. W. Drabble.

" 3.—**DUNDEE AND EAST OF SCOTLAND.**—"Lantern Slide Exhibition," by A. R. Dresser.

" 3.—**DARLINGTON.**—Annual Exhibition and Conversation.

" 3.—**BRIXTON AND CLAPHAM.**—Lantern night.

" 3.—**GLASGOW.**

" 3.—**EDINBURGH.**—"Eastern Europe."

" 3.—**NORFOLK AND NORWICH.**—Paper on "Hand Cameras."

" 3.—**LEEDS.**—"Notable Places in Wiltshire."

" 4.—**RICHMOND.**—Lantern night.

" 4.—**BRISTOL.**—"White Mountains of New Hampshire."

" 4.—**WEST LONDON.**—Technical social evening.

" 4.—**LEWISHAM.**—Lantern Night.

" 4.—**HOLBORN.**—"Exposure," by E. Benest and H. Thompson

" 4.—**POLYTECHNIC.**—"Flashlight Photography," by Mr. T. Paternoster.

" 7.—**SOUTH LONDON.**—"History of Gelatino-Bromide Photography," by Mr. J. Burgess.

" 8.—**CORNISH.**—"Lantern Slide Making," by Mr. H. Perey.

" 8.—**ROCHDALE AND DISTRICT.**

" 8.—**FAIRFIELD.**—"Platinotype."

" 9.—**PUTNEY.**—"Development," by G. Ardaseer.

" 9.—**COVENTRY.**—"Printing," by Mr. W. Orton.

" 9.—**KENDAL.**—Annual.

" 10.—**DEWSBURY.**—"Lantern Slides," by Mr. S. Mitchell.

" 10.—**HACKNEY.**—"Lenses," by Mr. P. Dando.

" 10.—**LONDON AND PROVINCIAL.**—"Collodio-Bromide Emulsion," by A. Maekic.

" 10.—**CHESTER.**—"Lantern Sliding Making."

" 11.—**RICHMOND.**—"Toning with Platinum," by G. A. Ardaseer.

" 11.—**WEST LONDON.**—"New Ilford Plate."

" 11.—**HOLBORN.**—"The Latest Novelties," by E. J. Wall.

" 12.—**HOLBORN.**—Annual Exhibition.

**Brixton and Clapham Camera Club.**—The first smoking concert of the season was held on the 27th ult. Dr. J. Reynolds, Vice-President, took the chair at 8.30 p.m., supported by a large number of members and friends. The proceedings opened with a glee, entitled "Mynheer Vandunek," by Messrs. Belton, Robb, and Whetton, who, in conjunction with Mr. Spear, contributed "Strike the Lyre" and "Phyllis Dyes her Tresses," during the evening. The comic element was provided by Messrs. Walter Jones and Ernest Thompson, who caused great amusement, more especially in their costume songs. Mr. Edward O'Brien and Mr. Whetton gave "Island of Dreams" and "An Evening Song" respectively, and Mr. G. A. Saiba played two violin solos. Recitations were given by Mr. Charles J. Corner and the Assistant Secretary (R. G. F. Kidson).



## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 4, Creed Lane, Ludgate Hill, London, E.C.**

### QUERIES.

5455. **Developing.**—In developing a negative of the interior of a church (right in centre of which is a stained glass window), the window is just about fully developed before the detail in body of church appears, and when the detail is fully out, the window has gone altogether in opacity. Can any reader suggest any remedy in developing for this? I have tried painting the window during development with 10 per cent. brom. potassium. This does not seem to stop it sufficiently. Plates used are backed, and pyro ammonia is developer used.—H. R. H.

5486. **Shutter.**—By using a blind shutter working in front of R.R. lens, opening and closing to the centre (such as two blinds each having a circular aperture same diameter as hood of lens, running in opposite directions and crossing each other at the centre of lens), would the margin of the plate be cut off? Would there be any advantage in having the apertures square instead of round; or would a single blind shutter with a square aperture be as good or better than either of these?—H. R. H.

5487. **Opalines.**—How are the leather backs fixed on to these? I have got the photographs safely on to the glass, and do not know how to proceed.—TASMA.

5488. **Film Carriers.**—Can any reader who has used Fallowfield's film carriers testify to their being thoroughly good and efficacious articles? What is the weight of them as compared with Eastman's? Are Eastman's carriers better, or are there better carriers (not film dark-slides) than either? Would "P. G. H." or "Towers," who answered query 5463 in the *AMATEUR PHOTOGRAPHER*, Feb. 26th, mind saying what carriers they use?—G. E. T.

5489. **Spots in Transparencies.**—In developing stereoscopic transparencies I am troubled with small semi-transparent spots. I print by contact, burning magnesium ribbon, and the plates are coated on ground-glass side. Plates and negatives carefully dusted, and plate steeped in water for a minute and brushed for air bubbles, and again brushed in developer. Will any reader kindly tell me what causes the spots? Few of them are round.—PERTSHIRE FARMER.

5490. **Developers.**—Would any reader kindly insert in this paper a good reliable formula for a pyro ammonia developing solution, 10 per cent., suitable for ordinary plates?—AN AMATEUR.

5491. **Multiples.**—Can any reader inform me of a receipt for making gelatine multiplexing apparatus?—COPV.

5492. **Stained Negative.**—I have a negative stained (I think by intensification) with an iridescent marking not unlike the effect produced by frost on a pane of glass, and which renders it unprintable. I want to save it if I can. Is there any way of clearing it?—ASHTON.

5493. **Reducer.**—I have been using the Platinotype Company's reducer. But if reduction is prolonged, this stains the negatives yellow. Can anyone give me formula for a reducer that will not do this, and is there any reducer that will affect a negative that has been intensified? The one above mentioned will not. It only covers it with a thick fog.—ASHTON.

5494. **Dark-room.**—Can any dark room builder kindly tell me which is the best wood to use for developing table and sink, etc.; also if lead sink is better than an earthenware one? If earthenware, where best obtained in and about London?—A. P. S.

5495. **Actinometer.**—Can any reader kindly inform me if Hurter and Driffield's Actinograph is preferred to Watkins' exposure meter?—A. P. S.

5496. **Copying.**—I want to get a cabinet negative from a carte-de-visite photograph. How must I do to accomplish this with ordinary half-plate camera? I can hardly copy full size. Can anyone tell how to extend my camera a little to be able to do this?—C. F.

5497. **Glazing Bromides.**—Will any kind reader tell me how to get a good gloss or enamel on Ilford bromide paper? I want to mount it in album; how shall I do this?—BROMIDE.

5498. **Painting Slides.**—Can anyone tell me where lessons in painting magic lantern slides are to be had?—NOTA BENE.

5499. **Backing Paper.**—Can anyone tell me where I can get papers for backing plates? I once saw some advertised, but cannot remember where. Also, can I use tartaric acid, for making bromide prints less black; and if so, what quantity should be used with the water?—MANFIELD.

5500. **Bromide Emulsion.**—Could any reader of the *AMATEUR PHOTOGRAPHER* give me a bromide emulsion suitable for coating plates and paper?—ROMBIDE.

5501. **Stereoscope.**—Will anyone be good enough to furnish me with full instructions and sketch for adapting a stereoscopic arrangement for a half-plate square bellows camera, using only one lens, as advised

in Wall's "Dictionary," the instructions in the latter ("Dictionary") not being very clear as to division in centre, whether made tight tight to bellows, lens, etc.? Will a R. R. 7½ focus do?—CONSTANT READER.

5502. **Metal Grooving.**—Where can I obtain metal grooving for use in a hand-camera for the plate to slide in?—S. DICKER.

5503. **Mawson Plate.**—Will any kind reader tell me if I could get good results from these plates without an instantaneous shutter? If so, about what exposure for Lancaster's quarter-plate Rectigraph lens.—SER.

5504. **Lens.**—Can some reader recommend an applanatic lens of about 3 in. focus, which will cover sharply 3½ by 3½ with full aperture, acting as R.R. lens, and cover 5 by 4 plates with a small aperture, acting as W.A.R. lens? Good definition and flat field are essential.—H.F.

5505. **Single Lens.**—Which 4 by 5 N.A. landscape lens can be recommended in addition to a R.R. lens? Brilliance and good definition are more important in this case than speed.—H.F.

### QUERIES UNANSWERED.

Feb. 19.—Nos. 5445, 5458.

„ 26.—Nos. 5473, 5474, 5476, 5478, 5481, 5482, 5484.

### ANSWERS.

5364. **Potassium Chloro-Platinite.**—Made by passing sulphur dioxide, SO<sub>2</sub>, through a hot solution of platinum bichloride, made by dissolving 1 part in 2 of boiling water, till the yellow liquid turns red, or until it ceases to give a precipitate with ammonium chloride. The chloro-platinous acid thus obtained is mixed with an equal weight of chloride of potassium. It can also be made by reduction with moist cuprous chloride.—OSIRIS.

5379. **Xylonite Films.**—After using both I can certainly say that England's and Fitch's films are as satisfactory and as easy as glass plates.—OSIRIS.

5380. **Making Lantern Slides.**—It would be quite possible to make slides from negatives of silver prints by flashlight, but far more satisfactory to burn 12 in. of magnesium ribbon on each side of camera, and from the negatives thus obtained to make lantern slides.—OSIRIS.

5382. **Enlarging.**—The Editor would probably object to full details of how to enlarge by daylight, but you would find directions in Wall's "Dictionary of Photography," or some articles appeared on Jan. 22 and 29. The half-plate R.R. lens and camera can be used.—OSIRIS.

5383. **Spots on Bromide Paper.**—These spots are caused by unequal drying of the prints; probably some drops of water remained some time on the print. Blot off your prints with clean white blotting paper, and treat the spotted prints to a wash in acid and alum bath, wash, blot off, and dry.—OSIRIS.

5392. **Lantern Camera.**—Wall's "Dictionary of Photography" would give you just the information you want.—OSIRIS.

5395. **Gold Lines.**—Get some ordinary gold size, a fine camel's hair pencil, and draw the lines with the size; when still tacky, apply gold leaf.—OSIRIS.

5396. **Cartes de Visite.**—These were introduced by Ferrier, of Nice, in 1857.—OSIRIS.

5400. **Enlarging.**—This could only be answered by examination of the lantern.—OSIRIS.

5409. **Japan.**—The exposure is, I believe, about half that required in England. Xylonite films will stand the climate. Cocking and Co., Yokohama, keep plates, etc.—OSIRIS.

5413. **Hand-Camera.**—An article appeared in *ForK*, No. 70.—OSIRIS.

5419. **Zoological Gardens.**—Apply to the Secretary of the Gardens.—OSIRIS.

5422. **Præsto Camera.**—It can be used on a stand, but it is hardly a camera for a beginner.—OSIRIS.

5429. **Reflex Hand-camera (Loman's).**—It is quite as useful as any other in the market and the best of its particular kind.—OSIRIS.

5433. **Stereoscopic Camera.**—It is impossible to make the Instantograph into a stereoscopic camera.—OSIRIS.

5436. **Opalines.**—Make your gelatine solution 20 gr. to the ounce, and add 5 parts of alkaline chrome alum solution to every 100 parts of solution; let your print get well soaked with this and squeegee thoroughly into contact.—OSIRIS.

5447. **Sensitising Opals.**—You would find either Wall's "Dictionary," or Woodbury's "Gelatino-Chloride Printing" give you full information.—OSIRIS.

5448. **Rectigraph Lens.**—Lancaster's "Silver-Ring Rectigraph" lens, is quicker than the single "Instantaneous" lens made by them. The former works at f/7, the latter f/10.—PERIODIC.

5470. **Reproducing Negative.**—I have obtained a good negative from a thin one, by first making a positive, then taking another negative from that, viz., place an ordinary plate in contact with the negative in printing frame, expose for 1½ sec., about a foot from a gas burner, develop in usual way, being careful to dilute the developer. When the positive is dry, proceed in the same manner as above, but giving two seconds exposure. This ought to give you a negative of good printing quality.—ZEBRA.

5471. **Detective Lens.**—Wray's R.R., of 5½ in. focus, is a splendid glass, working at f/5.657, price

£2 10s; Laverne's No. 77, working at f/7, is also good, price £2. Taylor and Hobson also sell one, like Wray's in aperture, but 5 in. focus, at £3 10s. All three are makers. Wray charges 15s. more for iris diaphragm and Taylor 7s. 6d. more.—E. A. H.

5472. **Lantern Slide.**—If P. D. Barnett will invest sixpence in Dresser's "Lantern Slides, and How to Make Them," he will find it a good investment and answer all his questions.—E. A. H.

5473. **Lantern Slide.**—Recommend you to get A. R. Dresser's Book "Lantern Slides, How to Make them," 6d. Read Chapter III., and you will see how to make lantern slides without special apparatus.—PERIODIC.

5475. **Devarnishing.**—Soak the negative in methylated spirit, and rub gently with a tuft of cotton wool soaked in same. Rinse the plate in some clean spirits, and wash under tap. If a white powder results it may be removed with a wet tuft of cotton wool.—ZEBRA.

5475. **Devarnishing.**—Soak the varnished negative in turpentine, and the varnish ought to come off in a short time.—U. B. SMART.

5477. **Spirits of Wine.**—Mineral naphtha is now mixed with methylated spirits to prevent unfortunate inebriates drinking it. If water is mixed with methylated spirits it becomes milky, from the above cause.—C. H. S.

5479. **Lens.**—The lens is what the maker terms an "Instantaneous" one, does excellent work of all sorts, and is infinitely superior to many so called instantaneous lenses now in the market.—ZEBRA.

5479. **Lens.**—The name of the lens sent out with the Lancaster half-plate "International" is the "Instantaneous." It is not a rectilinear but a single lens working at f/10. It is an excellent lens for landscape work, as I know from experience, and when used full aperture, portraits of great delicacy of softness can easily be obtained.—PERIODIC.

5480. **Ilford Printing-Out Paper.**—I think "Pyro" does not print deep enough. When the desired tone has been reached, remove the prints, without washing, to the fixing bath, which must not be too strong.—U. B. SMART.

### EDITORIAL.

J. KEASLEY.—We hope to send the medal this week. Always pleased to slate you when you send up prints.

R. McDUGALL.—Harlesden and Willesden Photographic Society; Mr. Isaac Cohen, 23, Wendover Road, Harlesden; Secretary.

A BEGINNER.—We have used the substance of your letter elsewhere.

CYANIN.—Many thanks for letters. The method of keeping iron in is not, we think, advisable, as the oil certainly helps to reduce the iron. We shall, however, have an article on it shortly.

H. S. W.—We can make nothing out of your prints. Send us up a negative, and we will print it for you.

W. T. TUCKER.—We never try to remember the addresses of competitors, life's too short; however, we have entered yours now.

IGNORANT READER.—You certainly ought to get a good quarter-plate outfit for the price you name, and if you get collodion films there will be a tremendous saving of weight. Yes, you can send developers out in concentrated form. Letter follows.

NEWFORD.—We should recommend for landscapes 6, for instantaneous 1, for lantern 5.

LLEWELIN ROBERTS.—Certificate will reach you, we hope, next week; we are merely waiting for the judges to sign.

C. C.—(1) We do not agree with this system at all, and certainly should never use it ourselves. We should use 7 or 3.

BRASSEUR.—You would find a very useful article in the last number of the "Photographic Quarterly," price 2s.; "Practical Photo-micrography," by Andrew Pringle, price 10s. 6d.; "Photo-micrography," by Jennings, 3s.; or some very good articles by Pringle appeared in our 13th and 14th volumes, 1891. The development, printing, etc., is as usual.

Geo. WILSON.—You will not be allowed to photograph in Epping Forest on Sunday; this is specially barred.

COLASTINE (Buenos Ayres).—Shall we send you out descriptive lists of the hand-cameras we think most suitable for your climate? Why not write to Taylor, Taylor, and Hobson direct for list?

H. C. BUTTERWORTH.—Medal will, we hope, reach you this week.

W. A. WATSON.—Send us a print and negative, and we will see what we can do for you.

ASHTON.—No. 1 is the one we prefer.

T. A. GROVE.—Your print was admitted.

J. T. H.—As in enlarging the focus of lens is increased, it will be impossible to use the same stop, but you may assume that the exposure will be about 20 times the usual.

A. C. NICCOLLS.—The print was passed before the judges with the others.

J. G. P. VERKER.—Many thanks for letter.

T. H. SAICH.—A print from a negative enlarged by the use of Cresco-Flyma is not eligible.

RYMASTONE.—The print is not up to competition standard; it is flat, and all the figures, etc., are leaning one way.



**RAPID.**—The results would have been far better if you had not got the wall as a background, and your shutter should have worked a little faster.

**S. S. G.**—We suppose we must not be hard on you, but (1) only shows a bit of the church, is spoilt by movement of trees. (2) Under-printed and over-toned. (3) Wants an inch of foreground, and over-toned. (4) Utterly without any artistic merit, too much foreground, over-toned, and shows unequal markings. You'll have to do better work than that for our competitions.

**GEO. LEWIS.**—No. 2 are the most likely to let you have what you want. We try to suit all tastes.

**R. V. B.**—No one could possibly answer your query, without actually testing the shutter; the editorial note to this was crowded out.

**E. H. ANDREW.**—The lens working at  $f/6$  cannot be reasonably expected to do what you required of it. It is rarely necessary to use so large an aperture, and if you will write us stating your requirements we will answer by post.

**WINTERSSETT.**—In the first place you do not state what will be the relative size of image to map, because, if it is to be large, the ratio aperture will be decreased, and secondly, you ought to use Mawson's or England's photo-mechanical, or else slow lantern plates for copying. Probably, however, the exposure would be at least five minutes. Pleased to help you further if we can.

**CESTRIAN.**—The weight you name is certainly rather excessive, but of course everything depends upon the style of camera. There are several cameras on the market which, when loaded with six plates, weigh about 6 lbs. We should prefer the 5 by 4 size, and the  $\frac{3}{4}$  in. lens. If you will put your requirements as to hand-camera into a letter, and send addressed envelope, we will write you.

**B. T. ORD.**—The paper you send is stearine paper, and totally unsuitable for the purpose. Write to Fallowfield or Adams for backing paper, for chloride prints.

**SNAPSHOT.**—Write to Chadwick, 2, St. Mary Street, Deansgate, Manchester.

**W. INGLIS JONES.**—If you have been in the habit of using Edwards' plates, by all means use their films, and write and ask them for carriers, which they can supply. We have some of their films for trial, and shall report next week.

**R. Y. M.**—(1) When you find it necessary to go against an accepted axiom of photographic procedure and get good results, you are perfectly justified in doing so. At this time of the year it is sometimes permissible to print in the sun. (2) If the borax bath is just with the chill off, and three times the strength you use, it takes about 15 minutes. (3) The duration of washing depends upon the method you employ, but about two hours. (4) Print washers are certainly of use—some of them, at any rate.

**SQUIRESS.**—We cannot give you any advice till we see the negative. If you will have the negative carefully packed in a wooden box, and let us have it, we will see what we can do for you.

**TRIX.**—(1) The toning bath is alright. (2) We had a leading article on warm tones on bromide paper on November 20th, 1891, p. 371, last vol. Sepia is very difficult to get; warm tones comparatively easy. We hope to have another article on it shortly.

**F. E. C.**—Warm the bath till about 70 deg. Fahr., and then tone. The more alkaline the bath, the quicker it tones, and the quicker it spoils as a rule. Carry your toning further. Pinholes may be due to dust, air bubbles, or faults in the emulsion. A mixture of India ink, sepia, and carmine, thickened with gum water, and applied in minute dots to the spots, is the best way to stop out.

**H. J. L. J. M.**—(1) The lens may be achromatic and yet not corrected for photographic work; probably however, it would work alright. Use the whole combination. (2) Find out the equivalent focus by focusing sun or clouds, remove the camera to dark-room, replace the screen by an opaque piece of cardboard with a hole in the centre, outside this hole place a candle, then examine front lens, and you will see the area of an illuminated circle, the diameter of which will, when divided into equivalent focus, give you the working aperture, probably  $f/3$ . (3) Presuming the lens to work at  $f/3$ , it would be seven times quicker than RR at  $f/8$ ; if it works at  $f/4$ , it would be four times quicker. Thanks for article; we will carefully peruse.

**F. W. G.**—(1) Yes, the lens is a good, reliable one for outdoor portraiture. (2) There is no better at the price. (3) Yes, the better results warrant the greater expense.

**H. HAMMOND.**—Pinholes in bag are the cause. Bleach the negative with mercuric bichloride, wash well and dry, and print from it like that.

**F. YOUNG.**—The lens is perfectly efficient, and none to beat it at the price.

**WM. R. THOMSON.**—We do not know what lens was meant; anyhow, it can't be worth much.

**BLANCHE.**—The blue stain may, and probably does, arise from the iron in the water reacting with the ferri-cyanide, which also becomes reduced. After treating the prints with uranium, immerse in citric acid bath, and then wash and repeat three times.

**GEORGE WATSON.**—We should certainly choose No. 1; this seems to us the most practical.

## Sale and Exchange.

**Cameras, etc.**—First-class half-plate camera, three double slides, can be used for stereoscopic work, sliding arrangement for wide-angle lenses, all latest improvements, cost £3 10s., sell for £5; waterproof bag for same, 12s.; Chapman's three-fold tripod, as new, 12s. 6d.; Parkes's bamboo tripod, 7s. 6d.—5, Milton Grove, Stockport.

Half-plate camera, all movements, Tomlinson's make, three double backs, with double-binged shutters, stiff canvas case, Thornton time and instantaneous shutter, with indicator, all new last year, price £4 5s.—V. O'Neill, Castleton, near Manchester.

**Cameras, Lenses, etc.**—Quarter-plate Merveilleux camera, fitted with Meritote lens, stand, slide; exchange for Omnigraph, or offers—J. White, Broadwaters, Kidderminster.

Lancaster's quarter-plate Instantograph, lens, and shutter, complete, new, used twice, 18s.—S. Rimmington, 7, Lesseppe Road, Liverpool.

Cabinet portrait lens, Horne, Thornthwaite, half-plate sliding camera, 35s.—Cronchley, Battersby Street, Leigh, Lancashire.

**Enlarging Apparatus.**—Enlarging lantern,  $\frac{1}{2}$  condenser, by Houghton and Sons, new last June, £5.—Berkeley, 4, Gray's Inn Square, London.

**Hand-Cameras, etc.**—Optimus hand-camera, brass-bound, can also be used on stand as ordinary camera; cost £10 10s.; focussing screen, six double backs, fitted with Optimus landscape and Taylor and Hobson's hand-camera lens, iris diaphragm, new last year; in good condition; price £7 15s.; lens cost £5 2s.—Frederick Holmes, French Embassy, Albert Gate, London.

Underwood's Sphinx hand-camera for sale, carries 12 plates, has two finders, two shutters, lens working at  $f/6$ , covered morocco, nearly new, £3; approval; deposit.—No. 244, office of this paper, 1, Creed Lane, E.C.

Talbot and Eamer's Diamond I camera, 12 plates, nearly new, complete in case, cost 27s. 6d.; carriage paid, 14s.—Wm. McCullough, Newtownards.

Shew's Eclipse quarter hand-camera, Taylor and Hobson's detective lens, Shew's patent shutter, nine double backs, cost 12s. each, focussing screen for hand exposures, Taylor's view finder, 5 dozen Wratten and Wainwright's drop shutter plates, beautiful mahogany case, carrying camera and six backs, all splendid order, £7 5s. the lot.—No. 249, office of this paper, 1, Creed Lane, Ludgate Hill, E.C.

For sale, a Persto hand-camera, scarcely soiled, cheap, 8s.—29, Richmond Street, Mount, Stoke-on-Trent.

Swinden and Earp's 5 by 4 detective camera, cost over £12, cash, £6 10s., or exchange marble timepiece and bronze figures.—Dr. Fitton, Dewsbury.

Latest pattern hand-camera, in perfect order, carries 12 plates, good shutter, finder, etc. 18s. 6d.—No. 251, office of this paper, 1, Creed Lane, E.C.

**Lenses, etc.**—For sale, Optimus 5 by 4 R.R. lens, three stops, 21s.; also 3-fold tripod stand and triangle, 15s.; also brown canvas case for quarter-plate camera, lined baize, 10s.—Hebeler, Western Road, Romford.

View lens by Lancaster, iris diaphragm, and instantaneous shutter, 10s.—Berkeley, 4, Gray's Inn Square. Lancaster's portrait lens, whole-plate, 2½ in. diameter, 50s., quite new, a bargain.—Ibbs, stationer, Kimbolton, St. Neots.

Half-plate wide-angle by Photo. Artists' Supply Association, condition as new, price 30s.; half-plate R.R. by Wood, Cheapside, good condition, splendid definition, price 27s. 6d.—Barker, 44-47, Bishopsgate Without.

8 by 5 R.R. Sands and Hunter's, iris diaphragm, quite new, cost £4 10s., price £3 5s.; high-class lens; approval.—Avery, 45, Prince of Wales' Road, Kentish Town.

**Sets.**—Underwood's patent quarter-plate camera, brass bound, reversing back, turntable, rising front, all movements, tripod, double slide, and Underwood's lens; first P.O. for 40s.—Jas. Logan, 20, Ponsobry Street, Liverpool.

For sale, complete photographic apparatus, consisting of a half-plate Lancaster camera and tripod, patent lens, with dilating diaphragm and instantaneous shutter, an "Amateur" dark-room lamp, seven printing frames, two dark slides, set of drachm scales, four negative boxes, six washing dishes, a Demon camera, and a quantity of mounts, chemicals, and photographic literature; price £7. May be seen at any time on application to H. G. P., 67, Downs Road, Clapton, N.E.

For sale, price £6, nearly new photographic apparatus, consisting of Werge's portable camera, three double backs in leather sling case, complete with tripod, and Ross' rapid symmetrical lens for plates, 4½ by 3½ (the best lens for outdoor photography), pneumatic instantaneous shutter, printing frames, ebonite dishes, cutter, shaping glasses, squeegee, etc.—Apply, F. E. G. B., 2, Bridlington Villas, Hainault Road, Leytonstone.

15 by 12 camera, Stereoscopic Company's best make, hardly used, very complete outfit, three double slides, iris lens, good pneumatic shutter, etc.—No. 245, office of this paper, 1, Creed Lane, E.C.

Whole-plate Lancaster's Extra Special camera, latest improvements, rectigraph lens, with iris diaphragm, three double slides, solid leather case, stand, with patent adjusting top and case for same; No. B See-saw shutter, new, not been used, cost £17. What offers?—A. C. C., 21, Harrow Road, Harlesden, N.W.

Lancaster's Instantograph, 1891, half-plate, with lens, tripod stand, and instantaneous shutter, three double backs, printing frames, and dishes, price £4, cost £5 10s.—H. Fernman, Lough.

Half-plate camera, very light, reversing back, double extension, nearly new, three slides, R.R. lens, sliding stand, pneumatic shutter, cost £7, eell cheap, or part exchange; hand-camera wanted.—Hugh Brown, Lyncroft, Braintree.

**Stereoscopic Apparatus.**—Chadwick's stereoscopic outfit, as new, camera, lenses, six slides, case, etc., Thornton-Pickard shutter, cost over £10, sell £8; also half-plate R.R. and wide-angle lenses to fit extra front, 50s.; deposit.—Butland, 8, Church Terrace, Penarth.

**Sundries.**—AMATEUR PHOTOGRAPHER, 251 clean numbers, and other books, 20s.—Valentine Charles, Sneyling.

Dewey's Gem shutter, 2 in., time and instantaneous, only used once, 7s. 6d.—Kitson, 14, London Road, Gloucester.

First 52 parts Cassell's "Illustrated History of England," as new; cost over 30s.; what offers? Carriage paid.—Kitson, 14, London Road, Gloucester.

Valuable bargain! Fine mellow-toned violin, in perfect preservation, suit lady or gentleman for orchestral or solo playing, complete, with baize-lined case and good bow, take 15s. 6d. for the lot; violin alone worth double; money willingly returned if not approved; about 20s. worth of unsoiled music given in free.—Mrs. Graham, College Buildings, Ipswich.

For sale, eleven vols. AMATEUR PHOTOGRAPHER, 4 to 14 inclusive, vols. 1, 2, and 3 "Photography," both unbound, complete, and clean, guinea for lot.—B., 166, High Street, Lewes, Sussex.

193 numbers of AMATEUR PHOTOGRAPHER, from 155, September 23rd, 1887, to 348, June 5th, 1891, except numbers 229 and 308; any reasonable offer accepted.—Haroldcane, 49, Kyverdale Road, Stoke Newington.

Valuable bargain! Fine mellow-toned violin, in perfect preservation, suit lady or gentleman for orchestral or solo playing, complete, with bow, baize-lined case, and Wolff's 5s. instruction book, take 16s. 6d. for all; violin alone worth double; money willingly returned if not approved; very genuine bargain.—Miss Francis, 35, Church Street, Ipswich.

AMATEUR PHOTOGRAPHER for 1888, 1889, 1890, 1891, clean and perfect, except for five numbers, 6s. the lot.—E. G. S., 29, Park Avenue, Willesden Green.

**Tripod, etc.**—One of Lancaster's best tripods, suitable for camera up to whole-plate, with waterproof case, 10s. 6d.—Rev. J. Chapple, Ivy Bank, Lincoln.

## WANTED.

**Burnisher, etc.**—Burnisher, half-plate; state particulars.—H. Mackachan, Polytechnic Warehouse, Coatbridge, by Glasgow.

**Cameras, etc.**—Wanted, whole-plate camera, without lens, square bellows, extension not less than 30 in.—A. J. Bagley, 83, Victoria Street, Basford, Stoke-on-Trent.

**Cameras, Lenses, etc.**—Camera, half-plate (instant preferred), rectilinear lens; also good 12 in. landscape lens.—D., 24, Tabley Road, Holloway, N.

**Dark Slides.**—Wanted, three quarter-plate double dark slides, best make, cheap, for cash; letters only, to Forrest, jun., 320, Renfrew Street, Glasgow.

Tylar's or Chadwick's metal dark slides for quarter-plate detective.—M., 37, Mount Park Crescent, Ealing.

**Enlarging Apparatus.**—Wanted, enlarging lantern, 5 or 6 in. condensers.—Frederic Newland, Kingstown, Dublin.

**Exposure Meter.**—Wanted, Watkin's exposure meter, approval.—H., 1, Seymour Place, Fulham Road.

**Hand-Cameras, etc.**—Wanted, hand-camera; cheap; also R.R., about 4½ in. focus, quarter-plate;—Fred Pearce, Magdalen Street, Exeter.

Wanted, a good magazine hand-camera; state price and full particulars.—No. 250, office of this paper, 1, Creed Lane, E.C.

**Lenses, etc.**—Lens, 9 by 7 Optimus Euryscope, Beck or Wray's I.L.R., cheap for cash, or exchange Optimus R.R. 7 by 5, and cash.—Pollard, 46, Green Street, South Shields.

Wanted, lens, portable, not less than 14 in. focus; approval.—C. Court Cole, Folly Bridge, Oxford.

**Sundries.**—Shew's adapter, to fit half-plate instantograph.—M., 37, Mount Park Crescent, Ealing.

Wanted, sundries, good condition and cheap, suit 5 by 4 camera, send list and prices.—Herbert, Blackrock, Dublin.

Wanted, case for tripod, good condition, length 24 inches.—Herbert, Blackrock, Dublin.

**L**ENSES adapted to larger flanges, 1s. 9d., post free —Hiljessam, 37, Mount Park Crescent, Ealing.



# The AMATEUR PHOTOGRAPHER

Telephone N<sup>o</sup> 1645  
Telegraphic Address: VINEY, LONDON

Office: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 388. VOL. XV.]

FRIDAY, MARCH 11, 1892.

[PRICE TWOPENCE.

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare*.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

**OUR VIEWS.**—The Free Portrait Association—Final Appeal, Maddox Fund—Croydon Camera Club Dinner—Notts Am. Phot. Assoc. Lecture—Origin of Term "Carte-de-Visite"—A New Finder and Level—Snap-shot Work—Developing Gelatino-chloride Papers—Two New Developers—Hurter and Driffield's Actinograph—Society Reports—Photographic Haunts in Spain.

**LEADER.**—Notes on Enlarging.

**LETTERS TO THE EDITOR.**—The Actinograph (W. L. Noverre, Hurter and Driffield)—Non-vibrating Luggage-carrier (Cyanin)—The Automatic Photographic Co., Ltd. (A. H. Hayes)—Society for Kensington and Bayswater (C. W. Brummell)—Reports of Societies' Meetings (A Beginner)—Aluminium (Simon Rannacles)—Actinometers (A. Watkins).

**APPARATUS.**—Firth's New Washer (Marion and Co.)—Tylar's Novelities—Esmail Enamels—Improved Sensible Focussing Cloth (Mawson)—The Todd-Forret Flash-lamp (Baird).

**ARTICLES.**—Elementary Photography (J. A. Hodges).

**ILLUSTRATED SUPPLEMENT.**

**ARTICLES.**—Photographic Exposure (A. Young).

**REVIEWS.**—Traveller's Colloquial Italian (Swan)—Taschen-Kalendar für Amateur Photographen (Miethe)—Bromide Paper (Woodbury and Snowden Ward).

**CATALOGUES.**—Fallowfield's Photographic Remembrancer—Archer and Sons.

**EXHIBITIONS.**—Darlington—Preston Camera Club—Keighley.

**SOCIETIES' MEETINGS.**—Ashton-under-Lyne—Bath—Blackburn—Bristol—Brixton—Bolton—Bournemouth—Camera Club—Chiswick—Crewe—Croydon Microscopic—Croydon Camera Club—Edinburgh—Glasgow—Gt. Yarmouth—Herefordshire—Hexham—Leigh—Lewes—Lewisham—Liverpool Y.M.C.A.—North London—North Surrey—Richmond—Rochdale—Sheffield—Southsea—Sydenham—Wakefield—West London—Wolverhampton—West Surrey.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All Communications should reach the Editor by Tuesday.)

"Amateur Photographer" Monthly Competition No. 34.—"PORTRAITURE AND FIGURE STUDY." Latest day, March 21st. Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, April 15th.)

"Amateur Photographer" Ladies' Third Competition.—"LANDSCAPE OR SEASCAPE—LANDSCAPE WITH FIGURE—PORTRAITURE OR FIGURE STUDY." Latest day, March 31st. Prizes: Gold, Silver, and Bronze Medals, and Certificate. Not more than eight nor less than six mounted prints to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C.

THE "free portrait" association has now got on another dodge, judging from a letter from a correspondent. Enclosed with the offer of a 21s. frame for 10s. 6d. is a circular setting forth the advantages of "Light work for ladies or young men at their homes," which consists of frame cutting, or rather another firm in another place. In connection with this subject we print the accompanying extract from a recent number of *Truth* :—

"I have several times stated that the various firms who have been working the 'Free Portrait' trick are all one gang—which had its origin, I believe, in the United States. A curious piece of evidence of the connection between them has just reached me, and from so remote a corner of the kingdom as the Island of Lewis. These rascals cast their hooks even as far as that, but fortunately they cannot cast them in any water where *Truth* does not also circulate. Two ladies in Lewis were induced by the usual circular to send a photograph of a deceased relative to 'Austin & Eddy,' at Margate; they were not induced, however, to comply with the subsequent suggestion that they should pay a guinea for framing the 'free portrait'; nor did they rise to the occasion when subsequent circulars reduced the price of the frame to half that sum. Tactics were, therefore, changed, and Beresford of Folkestone, *alias* the Imperial Portrait Association, appeared on the scene with a circular in these terms :—

"Recently, in purchasing a stock of a bankrupt firm, we came into possession of a half-finished portrait and a photograph belonging to yourself. . . . If you will show the work to your friends and recommend us as much as possible, we promise we will finish the picture in the best possible manner and send it to you securely packed and carriage paid on receipt of 5s.—this sum being represented as a payment for "carriage, packing, and other incidental expenses."

So that when 'Austin & Eddy,' of Margate, have exhausted their circularising resources they turn the game over to 'Beresford,' of Folkestone, to be continued in the above shape. I am curious to know whether 'Austin & Eddy' are also issuing circulars describing Beresford as 'a bankrupt firm' whose stock they have acquired. It will be remembered that it is only a few weeks since a man of law was informed at Beresford's place of business that that worthy himself had 'gone to South Africa.'"

—♦♦♦♦♦

MR. ANDREW PRINGLE, the Hon. Sec. of the Maddox Testimonial Fund, sends us the following notice :—

"FINAL APPEAL.

"Since its start this fund has been progressing satisfactorily, but the Committee feel that some period must be fixed for the closing of the subscription list, and the 31st of March has been chosen as the date for closing the list and making up accounts.

"It is proposed that the testimonial, when presented to Dr. Maddox, shall be in some such terms as follow :—

'This Testimonial is presented to Dr. RICHARD LEACH MADDOX, in recognition of his Services to Photography, and especially of his investigations in connection with Gelatine Emulsion.



"Appended is a list of subscriptions paid or promised in the United Kingdom, and it is hoped that those who sympathise with the object will give notice of their intention to subscribe, stating the amount, as soon as possible, to the Hon. Treasurer, Francis Cobb, Riverdale, Twickenham."

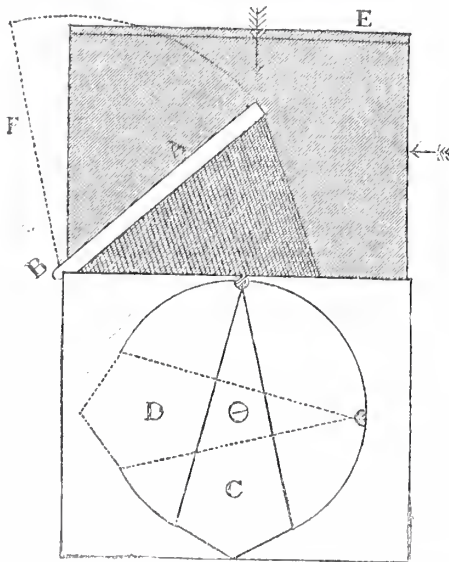
The Croydon Camera Club will hold their annual dinner on the 17th inst., at the Greyhound Hotel, Croydon. Mr. H. Maclean, F.G.S., will take the chair, and a programme of music and recitation will be arranged.

UNDER the auspices of the Notts Amateur Photographic Association, a lecture, illustrated by lantern slides, will be given in the Mechanics' Lecture Hall, on the 18th inst., by Dr. Manton, on "The Cruise of the Pixie, or a Sportsman's Holiday," and "The Workshop of the World, or Sheffield Folks and Sheffield Ways."

IN our Queries column, No. 381, a question, No. 5,396, was asked as to the origin of the carte-de-visite. We have received from Dr. E. Liesegang's *Verlag* the following note, for which we have to tender our thanks, as giving some interesting and to us new information.

"*Cartes-de-Visite*.—These are mentioned for the first time in the French journal, *La Lumiere*, of October 28th, 1854, where it is stated that Messrs. Delessert and Count Aguado have had an original idea with regard to the use of small portraits. 'Until now,' runs the editorial note, 'a carte-de-visite contained the name, the address, and sometimes the title of the person represented by it; would it not be as well to substitute the portrait for the name. This has been the idea of the two gentlemen, and it has met with much encouragement, etc.' Since that time the term 'carte-de-visite' has been retained for those portraits of small size."

A CORRESPONDENT, S. P. J., who has already favoured us and our readers with one or two very practical suggestions, notably the multiple developing dish, and a revolving plumb-level, now sends us the following:



A, hinged mirror in position for vertical pictures. When the level is required for horizontal pictures the mirror is turned back and forms an extra screen.

B, plumb-level, assuming the position of the dotted lines when in use for vertical pictures.

C, front screen of finder.

D, screen of finder.

E, mirror turned back and forming an extra shade for horizontal pictures. The lens is supposed to be the other side.

We have had the opportunity of examining some sixty odd snap-shots taken by this gentleman, and our monthly competitors may think themselves lucky he does not compete, or

he would, we think, run some hard for the Silver Medal. Some of them are perfect, both artistically and technically, and are very strong arguments for the use of the hand-camera in intelligent and artistic hands. Many of our competitors think that small-size pictures are handicapped when competing against large ones, but as the Gold Medal in our "Holidays with the Camera" competition was won by quarter-plate hand-camera shots, this is an erroneous idea, and the work of our correspondent, which now lies before us, goes far to prove it also.

HERR VALENTA, who has published so many papers on his valuable researches on various subjects, now contributes to the current number of the *Photographische Correspondenz* a complete monograph on the development of gelatino and collodio-chloride emulsion papers, such as Obernetter, Celero-type, Ilford P.O.P., Aristotype, etc. The method employed is to use an acid developer, and enables one to cut down the exposure to one-fourth or one-fifth of the usual time; in fact, merely a faint image is printed out, and the paper is then developed. We shall print the translation of this paper in full in our next issue, but it is crowded out this week.

Two new developers are announced, introduced by the chemical factory of J. Hauff, of Feuerbach, near Stuttgart; they are Methol and Glycin or methyl-paramido-meta-kresol, and paraoxyphenylglycin, both derivatives of paramidophenol or Rodinal. The note on these we shall also give next week.

WITH reference to our remarks on Hurter and Driffield's method of determining the speed of plates, these gentlemen point out that their method is "not practically the same as that adopted by the International Congress, but is an absolutely novel discovery, which was the outcome of a long and laborious research on the action of light on the sensitive plate." What we referred to was this: Messrs. Hurter and Driffield determine the speed of a plate by estimating the amount of silver deposited after exposing the plate to a standard light for a standard time; in their case, we believe, the sky light. The International Congress estimate the speed by exposing the plate to a standard light, an amyli-acetate lamp, for a standard time, and estimating the deposit of silver by comparison with a scale of tints. There is obviously some similarity of method, but we certainly did not intend to imply that Messrs. Hurter and Driffield had copied the Congress method, which our remarks seem to have inferred, judging from their letter. We therefore willingly make the *amende honorable*.

WE publish a letter in our correspondence columns to which we direct the attention of the secretaries of all Photographic Societies, as embodying to some extent our views on the subject of the reports which we now receive. Brevity should be the prevailing characteristic, and we are merely repeating ourselves when we say that we shall be at all times willing to print in full or in abstract any paper read before a society. We may as well point out, however, to our correspondent that it is rarely possible for us to print the following week any paper read before a society. It frequently happens that we have two or three weeks' matter for the paper in type.

A CORRESPONDENT will be glad to hear from any of our readers as to suitable places for photographic work in Spain, beyond Madrid, Seville, Barcelona, Malaga, Cordova, Granada, Cadiz, and Oporto. We shall be pleased to forward any information we receive to our correspondent.



## NOTES ON ENLARGING.

## APPARATUS.

ONE of the objections frequently heard from the amateur whose purse may not be, like that of Fortunatus, practically illimitable, is that enlarging is so expensive, the apparatus is costly, the condensers beyond his reach, and the sensitive paper, dishes, etc., make it still worse. We shall endeavour, therefore, in the following notes to give methods by which enlargements may be made without any great outlay, and at the same time shall introduce commercial apparatus devised for the same purpose, with the makers' directions for using the same.

For convenience sake we may divide our apparatus into two classes: first, that required for daylight enlarging; and, secondly, that required for artificial light. We may again subdivide our two classes into minor sub-classes: thus, daylight enlarging may include (1) Solar work, (2) Diffused light; and artificial light includes (1) Lantern work, including the use of condensers; (2) Work without condensers. Then, again, we may use petroleum, gas, enriched gas, lime-light, or magnesium; these, however, will be described as we go on.

## I. DAYLIGHT ENLARGING.

(1) *Solar Work*.—By this term we understand the use of the solar rays themselves, and not their light reflected from any card or white surface. Although this was one of the first processes employed before bromide paper was invented, and was used for printing on ordinary silver paper, carbon tissue, etc., we shall dismiss this in a few words, because the apparatus is costly, and sunlight, unfortunately, not always to be turned on and off at will.

For this work Woodward invented his solar camera, and Monckhoven improved upon this with his dialytic apparatus, other instruments also being made for the same purpose. Large condensers are absolutely necessary, not less than nine inches in diameter, and the solar rays have either to be kept motionless by means of a heliostat, or mirror mounted equatorially and driven by clockwork, or else by careful and attentive work of an operator. As, however, equally good results can be obtained by using the apparatus described hereafter, no further description will be given; but, for the information of those desirous of spending their money, full and complete instructions will be found in Monckhoven's "Optics."

(2) *Enlarging by Diffused Daylight*.—By many this will be found the most convenient and cheapest method of making enlargements; but as to whether it is the best is altogether another question, which we shall consider later on at the end of the instructions for both methods of illumination.

We have here also what may be practically considered as two distinct methods of working, the one using the actual light of the sky itself, and the other using reflected skylight. Before entering into particulars of either method, however, there are one or two details which it is advisable to elucidate. We may decide to use a darkened room or a special camera for the purpose of obtaining the enlargement, and the necessary arrangements will now be described. If we desire to use a darkened room, such as an ordinary sitting-room, it is obviously necessary that the light shall be prevented from having access to it by some means or other; therefore we will suppose that the room has one window, which, if possible, should face the north, and it is desired to block out this window temporarily, so that the room may be afterwards used in the ordinary way. It is obvious that pasting brown or non-actinic paper on the panes of glass is not admissible; therefore we must have recourse to some other arrangement which can be tempo-

rarily applied and bodily removed when done with. A convenient contrivance, which can be very cheaply put together by any one possessing a little knowledge of carpentering, may be made as follows, or any working carpenter will knock it up in a few hours at a trifling charge. To make it still plainer we will take an actual example made for our own use. The window which it was requisite to block up measured six feet and four feet, and, like most windows, was divided across the middle by a double sash. The sashes of the window measured at the sides one inch in breadth; at the top and bottom, two inches. Two frames were therefore made, one to fit into the upper part of the

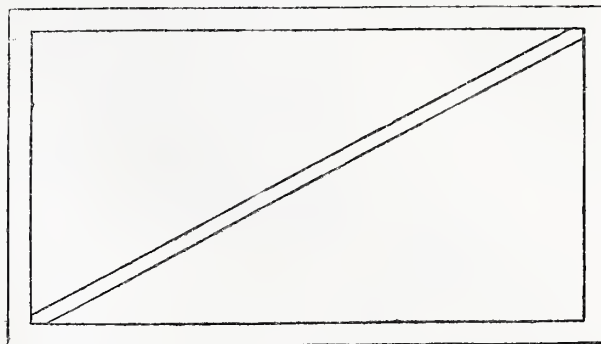


FIG. 1.

window, and one into the lower; the upper frame is shown in fig. 1, the lower in fig. 2.

The frames were made of deal half an inch thick and two inches wide: the upper one, fig. 1, had a crosspiece to strengthen it, which was also convenient to lift it up by; the lower one, fig. 2, had two crossbars to strengthen it, and which were also used, as described hereafter, for the reception of the negative. We have now the skeleton, and it is only necessary to cloth it to make it a complete and useful piece of apparatus. For this purpose stout, dark-brown American cloth, which is a kind of coarse canvas covered with some coloured water-proof substance, was chosen, and this was tacked on to the upper frame, and the edges brought round to the back of the frame so as to

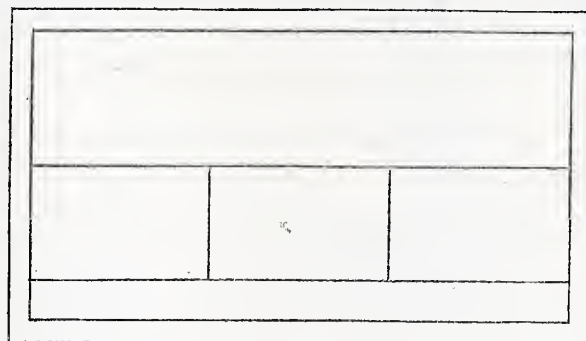


FIG. 2.

exclude any stray ray of light which might otherwise creep in; the shiny side of the cloth was at the back, the woolly side being towards the window. To make absolutely certain that no light penetrated the cloth, ruby paper was pasted on the woolly side of the cloth. At the edges of the frame where it touched the sashes of the window, a double thickness of woollen list was tacked; so that, when the frame was inserted in place and secured at the top by a turn button and at the bottom by the catch of the window, there was sufficient pressure on the frame to make it fit up close to the sash and exclude all light. The lower frame was treated in the same way, with this exception, that an



aperture was cut in the cloth, and the edges then nailed to the little crosspieces, where the negative is afterwards placed; when these two frames are fitted into the window and the aperture blocked up, there should be no stray streaks of light anywhere. Brown paper, of course, may be used instead of American cloth, but the latter is much more durable, and less likely to suffer accidental damage by the fingers being put through it.

Now, let us see as to using a special camera, so that we may not need to darken the room. To make a camera which shall answer this purpose is evidently not very difficult, and we will give an idea on the subject and leave our readers to work out the details themselves. The operator's own camera and lens may be used, and a makeshift arrangement consisting of black silesia running on iron rods, and fitting on to the lens at one end, and bearing a focussing screen and a dark slide to hold the sensitive surface at the other.

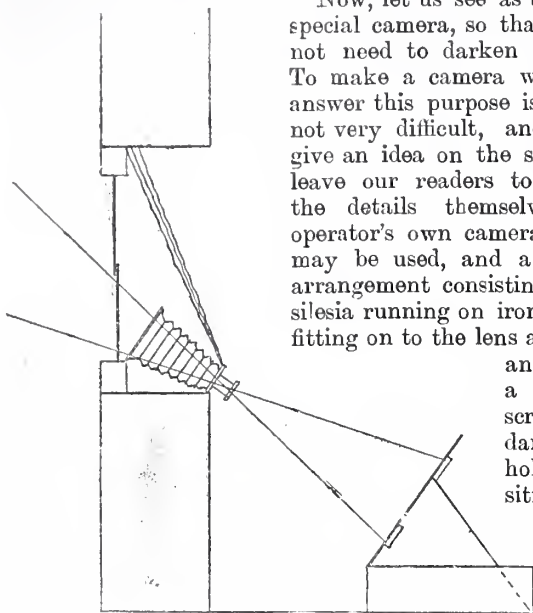


FIG. 3.

We have seen earlier that we may use the actual light of the sky itself, and this is shown also in fig. 3, where the camera is presented to the sky. If we are using a darkened room, then the camera must be tilted in the same manner; this may have some advantages, which in our opinion are outweighed by the extremely awkward manner in which the camera has to be sloped, the sensitive surface, of course, having to be parallel with the negative. We come back, therefore, to the method of using the reflected skylight, and fig. 4 will show us how to arrange the whole apparatus.

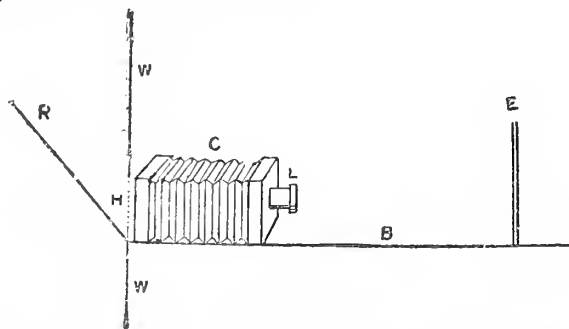


FIG. 4.

We have described the method of blocking-out the window; the method of placing the negative in position, if more than one size is to be enlarged from, is by the use of carriers as used in dark slides, which should be provided with little buttons for fastening in place, and springs for holding the negative, these said carriers fitting into the aperture in the window.

Or the negative may be placed in the dark slide of the camera, and the slide inserted in the groove in the ordinary way, and the shutters of the slide pulled out so as to allow

of the free passage of the light through the negative. The camera must be pushed close up to the negative, or a cloth so arranged that no light enters the room but that transmitted through the negative. It is not, of course, absolutely necessary that the camera should be used actually. All that is necessary is a board to support the lens, the focussing cloth or a black sleeve to prevent all light but that transmitted through the negative from having access to the sensitive surface.

It will be found convenient if the camera or the lens and easel or board for the support of the sensitive surface be on the same level, so that a board or table may be used, as seen in fig. 4, to obtain this end. The table or board should have two parallel pieces of wood nailed to it, so as to enable the camera and sensitive surface to be kept exactly parallel.

The next question is the reflector (see fig. 4) outside the window. Many operators use a mirror for this purpose, but the objection to this is that a dark and a white cloud passing simultaneously over it, or actually the image of the clouds, will cause unequal illumination of the negative, and consequently unequal illumination of the enlargement. Certainly a mirror gives the greatest illumination. In place of the mirror, a sheet of white cardboard, enamelled iron, or opal glass may be used. The operator will make his own choice in this matter. The reflector must be fitted at an angle of 45 deg. outside the window; and a cord fastened to the top of it, and passing through the sash at the middle of the window, will keep it in position, and enable it to be raised or lowered at will. We use a sheet of opal glass mounted in an old picture frame, which is hinged at the lower end to the bottom of the window sash, and fastened by a cord at the top to the middle of the sash; a gimlet was used to make a hole in the sash, and the cord run through and rendered taut by a turn or two round a stout nail. The reflector, no matter what material it is made of, must be sufficiently large that when the eye is placed at the position of the lens, and the negative removed, nothing but the reflector can be seen through the aperture in the shutter.

The only point now needing a little elucidation is that of the easel or other support for the sensitive surface. This may actually be an easel as offered by some commercial firms.

We use an arrangement of a large printing frame measuring 24 by 20, which carries a sheet of plate-glass puttied into the rebate. Behind this is placed the ground-glass focussing screen, the centre of which is ruled in small squares of half an inch with lead pencil, and then varnished with crystal varnish for a space of about the size of a quarter-plate; this is used with a compound focuser for obtaining microscopically sharp enlargements. The ground side of the glass is next to the plate-glass, and consequently facing the lens, just as in an ordinary camera; the ground-glass is held at the sides by two small studs, as used for the interior of dark slides. The printing frame fits into a specially made stand, which runs on a couple of parallel pieces of wood on the table, and is instantly clamped at about the right distance from the lens by lever cams, fine focussing being adjusted by means of a short rack and pinion. The above arrangement is, of course, a little more elaborate than actually required, as a printing frame supported in any way so as to be absolutely steady when placed upright, and also parallel with the negative, is sufficient.

**Sheffield.**—The meeting was held on the 1st inst., Mr. Chesterman in the chair. After the usual routine business, the Secretary placed upon the table the exhibits of prize pictures of a recent competition of hand-camera work, which caused a very warm and earnest discussion as to whether a good and artistic picture could be taken with the hand-camera, the uses and abuses of that class of camera, etc.



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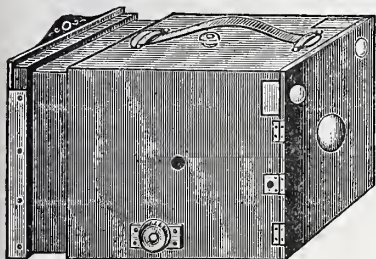
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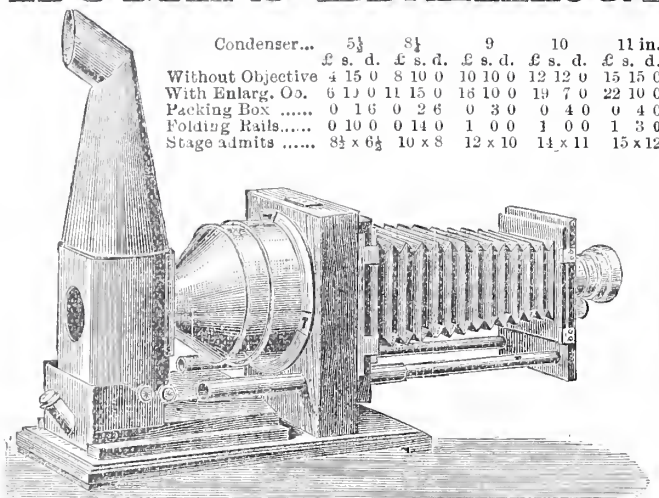
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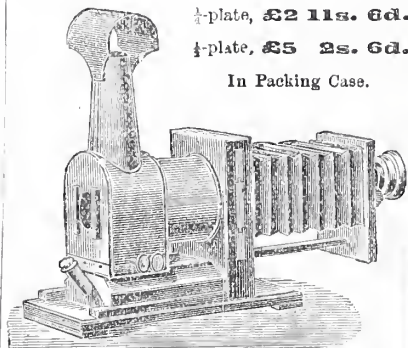
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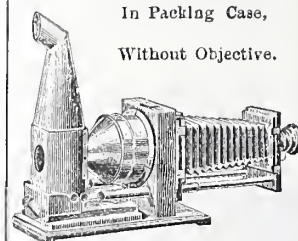
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## Letters to the Editor.

### THE ACTINOGRAPH.

SIR,—In your issue of February 12th I pointed out certain objections to the Actinograph of Messrs. Hurter and Driffield. From their silence it may, I suppose, be assumed that no satisfactory reply can be given to the objections raised, and that we are as far as ever from having a really efficient instrument for timing exposures. I should like to take this opportunity of noting a printer's error in my letter, the words "a difficult kind of subject" having been printed in place of the words "a different kind of subject."—Yours, etc., W. L. NOVERRE (Colonel).

Brighton, February 27th, 1892.

NOTE.—Messrs. Hurter and Driffield in a private letter state that they are unable to reply to all criticisms which appear on their Actinograph, through want of time. We would recommend Col. Noverre to write to Messrs. Marion and Co. for the small book of instructions for using this instrument.—ED. AM. PHOT.

SIR,—We are glad to learn that "S. E. K." has found our Actinograph of value to him, and we are obliged to him for his comments upon it. As, however, in his last letter, his remarks respecting the use of the Actinograph in different latitudes are erroneous, and likely to mislead, we shall be obliged if you will allow us to make the following explanation.

The light scale for one latitude cannot be adapted for use in another by the simple application of a factor, because the light throughout the year, and throughout the day, is not proportional in different latitudes. As we approach the equator, the maximum light increases, and the length of the day decreases. At the equator the maximum light possible (100 Actinograph degrees) occurs in March and September; with us, the maximum light (87 Actinograph degrees) is reached in June, when at the equator it is 93 degrees. At the equator at six o'clock in June, and all the year round, the maximum light is 3 degrees; there being no light at all immediately after 6 p.m. and before 6 a.m. With us, in June, the maximum light at six o'clock is 33 degrees, there being available light at 4 a.m. and up to 8 p.m.

The more extended the zone throughout which it is desired to use a single Actinograph, the more closely must its use be confined to the summer months and to the middle hours of the day. It is in the winter months, and in the extreme hours of the day, that inaccuracy would chiefly be felt. The entire light scale is, however, in practice, sufficiently accurate for a considerable range of latitude.

We hope that the illustration we have given will serve to show why a simple correction cannot be applied to convert the light scale for one latitude into that for another.—We are, yours, etc., F. HURTER and V. C. DRIFFIELD.

\* \* \* \*

### NON-VIBRATING LUGGAGE CARRIER.

SIR,—Perhaps you will think it irrelevant to reply to an already answered question, but my motive in doing so is to add a word or two as a supplement to Mr. MacLeod's reply to query 5448, *re* "the non-vibrating luggage carrier."

There are many in the same position as "Tnom Llarrow," who would willingly combine cycling and photography together. However, in the *C. T. C. Gazette* for August 1890, there is an article on this subject by Mr. E. R. Shipton, delivered to the Camera Club. In few words it amounts to this:—Keating's Spring Carrier, made by Walter Carson and Sons, Batchelor's Walk, Dublin, supplied by the Coventry Machinists Co., whose London agency is on the Viaduct. The "Cyclo Camera" arrangement is also treated to some length in "Photography in a Nutshell," the second edition.—Yours truly, CYANIN.

Glasgow, February 27th, 1892.

\* \* \* \*

### THE AUTOMATIC PHOTOGRAPH COMPANY, LIMITED.

SIR,—My attention has been called to a paragraph on the front page of your issue of the 19th ult in which you state that this Company is now passing through the Bankruptcy Court.

I have to inform you that such is not the case, as this Company is not and never has been in liquidation, but is still carrying on business, and I must ask you to be kind enough to correct your statement in your next issue, as an inaccuracy of this description is very injurious to the Company.

I enclose you herewith a specimen photo taken by artificial

light by our machines, and automatically, the whole process not occupying more than one minute, and I think you will agree with me that the result is very good.

To return to your paragraph, I think you must be confounding the Foreign and Colonial Automatic Photo Company with this Company.—Yours, etc., AUGUSTUS H. HAYES,

(Secretary of the Automatic Photograph Co., Ltd.)

10, The Minories, E., March 1st, 1892.

\* \* \* \*

### SOCIETY FOR KENSINGTON AND BAYSWATER.

SIR,—Owing to the West London Photographic Society having moved its head-quarters from Hammersmith to Chiswick, the large district comprising Bayswater, Hammersmith, Kensington, and Notting Hill is now left without a society. Within this large area it is thought there are many photographers, both amateur and professional, who would benefit by a society being formed in their midst, so a few gentlemen interested in the subject met last week and resolved to call a meeting for that purpose. It will be held at the Horbury Rooms, Kensington Park Road (close to Notting Hill Gate Station on the Metropolitan Railway) on Monday, the 21st inst., at 8.30 p.m., and all gentlemen interested in the matter are invited to attend. Those unable to attend, but willing to join in the movement, are requested to send in their names to me before the date of the meeting.—Yours, etc., CHARLES W. BRUMWELL

(Secretary *pro tem.*)

7, Lower Terrace, Notting Hill, W.

\* \* \* \*

### REPORTS OF SOCIETIES' MEETINGS.

SIR,—Will you please excuse me writing a few lines to complain, not, of course, of you, but of the uninteresting reports of the societies' meetings so often found. I am the rawest of raw amateurs, and as I live some five miles from the nearest society and am always occupied in the evenings, I am not a member of any society, and so take in your paper to fill up the gap. Nor am I disappointed.

Although I have only been at it some six months, and have never yet put in a query, yet what with your own leading articles, "Photographic Procedure," and the "Answers" to queries and "Editorial" I get on fairly well, but the two or three pages of societies' meetings are, as far as an amateur is concerned, simply wasted. I have a habit of just ticking off anything *practical*, and in this week's issue, February 26th, although the reports occupy six columns, I can only find *eighteen lines* of information useful to a mere tyro or indeed to any one else.

You, sir, cannot make bricks of straw, but you would be only too pleased, I am sure, if the secretaries would send you good practical reports and resumés of the papers read before them. It gets monotonous to read time after time "5,000 slides were passed through the lantern," or "A million members were present," or "Mr. Blank read a paper on 'Gelatin-Chloro-Bromo-Iodide Emulsion, and how to Make it,' which was followed by an interesting discussion in which many of the members took part."

Let me just point to one bright spot and example to show what I mean and how it should be done. I need scarcely say I refer to the little paragraph on page 171, headed "Painting lantern Slides." It is as full of meat as an egg, and though to most of your readers it will be perhaps familiar, yet I venture to think that few will complain of its insertion.

Why did we not have a resumé of Mr. J. Weir Brown's paper before the Croydon Club? I am itching all over to know how the red chalk tones were produced. You, Mr. Editor, tantalise us each week by putting down "Societies' Fixtures," and my mouth waters for your next week's copy to see what Mr. Durham will say on "Finishing in Monochrome," or Messrs. Benest and Thompson on "Exposure," or Mr. Paternoster on "Flash-light Photography," besides other papers on the list. I do hope I shall be able to gather something of value, for surely if you open your columns at all to societies the least that can be expected is that the secretaries will send something of use to the amateur photographer for whom you cater.

With many thanks for the usefulness of your paper, I am, Sir, A BEGINNER.

\* \* \* \*

### ALUMINIUM.

SIR,—They say that "a fellow feeling makes us wondrous kind." I suppose that is so. At any rate, seeing your letter in



re aluminium, in the AMATEUR PHOTOGRAPHER of the 26th ult., causes me to endeavour to do what I can to enlighten you and put you in communication with the fountain-head of that mineral. A catalogue of one of the leading London houses in photo apparatus informs me that they mount their photo objectives in aluminium at an extra cost of 50 per cent.; that makes it about £2 to £2 10s. for the mount of a half-plate extra rapid rectilinear lens, which I think is rather a joke, as, taking brass castings at 10d. per lb. and the difference in specific gravity between that metal and aluminium, it brings the prime cost of the castings at about the same price. The address of the people who make a speciality of this metal is The Aluminium Industrie Actien Gesellschaft, Neuhausen (Rheinfall), Schweiz. *Anglice*: The Aluminium Industrial Company, Limited, Neuhausen (Rhine Falls), Switzerland. They supply castings to patterns sent them at £12 10s. per cwt. for quantities of 2 cwt., or 100 kilograms. For lesser quantities 10 per cent. extra. Only last year they made in Germany a complete lifeboat of this metal, showing that the metal is not quite 8s. 6d. per oz. There is every reason to expect that it will be still cheaper as they perfect the means for gaining the metal from the clay. Trusting that this communication may prove of use to you, I remain, yours, etc.,

SIMON RUNNACLES.

#### ACTINOMETERS.

SIR.—It is quite right that "S. E. K." in last week's issue, should present the "other side to the question," but his statement of fact is incorrect. The Reading amateur, to whom "S. E. K." refers, wrote to the makers of my instrument, complaining that the use of the actinometer caused over-exposure in his negatives, and enclosed a bit of the sensitive paper. The letter and paper were sent on to me for trial and investigation. I found that the paper had deteriorated in sensitiveness through age, and perhaps damp. I wrote to this effect, and also mentioned the fact that the earliest issues of the paper were much more sensitive to damp than the present issue; but how this can be twisted into the statement that "the inventors have admitted that the paper had not been carefully prepared," I am quite at a loss to understand. It is not certain, by the way, that this failure must be due to the use of stale paper. The instrument is one for *calculating variations from one test exposure*, and when the primary test exposure is altogether omitted, the result may not be satisfactory. Photographers in using the various printing processes have to face the fact that there is a decided limit to the keeping properties of the sensitive papers, and certain conditions under which their sensitiveness is very quickly impaired take platinum paper and carbon tissue, for instance. In the same way users of the very sensitive paper for actinometers must bear in mind that there are similar limitations to its keeping qualities. A plan recently adopted does away with the danger of deterioration of the paper while in a dealer's stock, etc. The paper is sealed up in presence of calcic chloride in a metal capsule, and will probably keep indefinitely until opened. After opening, it can be relied upon for six months in ordinary circumstances.

ALFRED WATKINS.

Hereford, March 5th.

#### Apparatus.

##### FIRTH'S NEW WASHER.

MR. GEO. FIRTH has sent us the following description of a new washer he has invented. It consists of a top and bottom tank, which fit one into the other, and are provided with syphons. The prints are placed in loose perforated trays contained in a frame or cage, which is removable from the lower tank by means of handles or cross bars. The trays are preferably arranged in the cage or frame so as to rest one upon the other. Water is poured into the top tank, and from there into the lower tank by means of the syphon, and is discharged from the lower tank by means of the lower syphon. Thus the prints are alternately soaked and drained, thereby effectually washing the prints. Twelve prints can be washed at once.

Messrs. Marion and Co., 23, Soho Square, London, W., are the sole makers and agents of the above washer, to whom all communications must be addressed.

##### TYLAR'S NOVELTIES.

Mr. W. Tylar, of 57, High Street, Aston, Birmingham, sends us two or three very useful novelties. The first is "Ivoryine Tablets," price 1s. 6d. per dozen, shown in fig. 1, and consisting



FIG. 1.

of a neat little tablet in brass frame, which can be affixed to negative and lantern slide boxes, drawers, printing frames, for writing particulars of contents of same on in lead pencil, which is easily rubbed out.

The new portrait-holder shown in fig. 2 is one likely to find favour, not only amongst professionals, but amateurs as

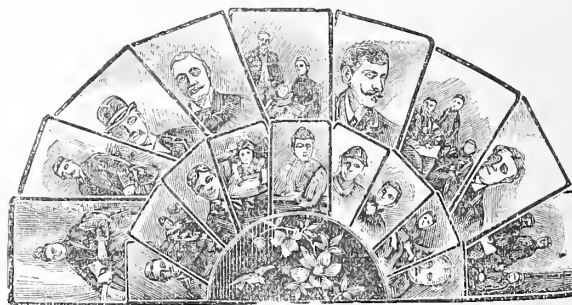


FIG. 2.

well. It is made of black papier-maché, and has a spray of flowers painted on the front, and two grooves into which the prints are placed; the whole is fan-shaped, and will form an ornamental addition to any table, whether in the home or reception room.

In fig. 3 is shown the new photo-micrographic camera, which

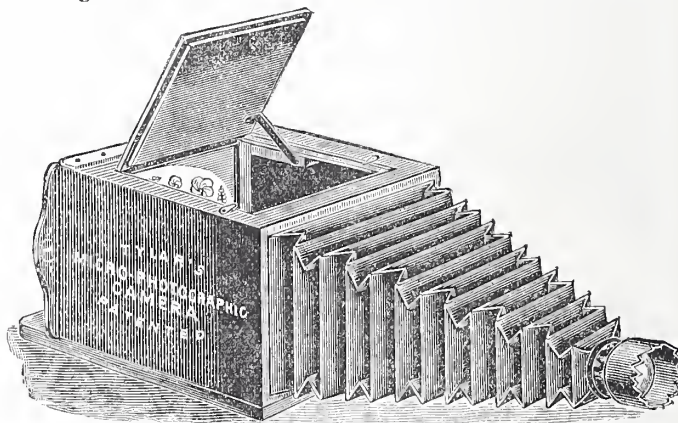


FIG. 3.

is well made, and very convenient, and is sent out, accompanied with solutions, developers, and instructions for using the same, in a neat little box. To the microscopist anxious to try his hand at photo-micrography this set will be welcome, and its price places it within the reach of all.

##### ESMAIL ENAMELS FOR AMATEURS.

The Esmail Enamels (by A. Guye, jun., 77, Farringdon Road, London) consist of convex metal tablets, enamelled with a composition especially made to receive a photographic image, and at the same time capable of withstanding several fires without cracking. In this process a glass plate is first coated with a sensitive solution and then exposed in an ordinary photographic frame under a positive transparency. The picture is developed by brushing the plate over with Esmail developing powder by means of a soft camel-hair brush. After flowing collodion over the picture and placing it in a weak solution of sulphuric acid the film will detach itself from the glass and can then be trans-



ferred to the Esmail enamel. The picture is fixed by heating the enamel to redness in a small muffle furnace, but those who wish to avoid this expense can send the enamel to Mr. Guye for firing. The coating and drying of the plate can be conducted in an ordinary room if the shutters are closed, but all the other manipulations can be performed in broad daylight. Mr. Guye has arranged to give both class and private lessons. The process is by no means a difficult one, and with a little practice very fine and artistic results can be obtained, which in the smaller sizes can be mounted in gold or silver to make pretty articles of jewellery.

#### IMPROVED "SENSIBLE" FOCUSING CLOTH.

Mr. T. Manson, of 37, Highgate, Kendal, has sent us the improved focussing cloth he is placing upon the market for this season. It is, as many of our readers know, bag-shaped, and covers the camera completely with the exception of the lens. A slit is provided underneath which allows for the use of turntable top cameras. In its new form the cloth will now fit any camera and will form an efficient cover to the camera and dark slides in the field, and be a useful protection to the same whilst travelling. It is one of those practical adjuncts to comfort in working which every worker will appreciate, and it is very cheap.

#### THE TODD-FORRET FLASH LAMP.

Mr. A. H. Baird, of 15, Lothian Street, Edinburgh, sends us some further notes on the above novelty, reviewed in our issue of Feb. 12th, p. 113, and a new form of clip for the rubber tube, which enables one to regulate the air supply so that exposures from 1 sec. to 25 sec. can be obtained.

We have since tried the lamp both for time and instantaneous exposures, and have found it far more powerful than we at first supposed, and have been using it with our lens considerably stopped down with successful results.



## Elementary Photography.

BY JOHN A. HODGES.

#### CHAPTER VII.

### THE MANIPULATION OF THE CAMERA IN THE FIELD.

Getting Ready for Work—A Good Suggestion—Packing the Apparatus—A word upon Dry-plates—Isochromatic Plates—The "Castle" Plates—Filling the Dark Slides—Procedure—Our Object defined—The Subject. Artistic Considerations deferred—Setting up the Tripod—How to Focus—The Use of the Diaphragms; a Good Rule for the Beginner—The Exposure of the Plate—Exposure Tables; the Writer's Advice—Making a Record—How to Expose—Further details.

PRESUMING that the reader has carefully read the preceding chapters, and acted upon the advice therein given, he will probably be eager to put his apparatus to a practical test by taking his first photograph. Let him, therefore, pack up his apparatus, and, accompanied by the writer, set out upon his first photographic expedition.

In getting his apparatus together he must be careful to include all the different articles that he will require. Even the memory of the experienced photographer sometimes fails in this respect, and nothing would be more annoying to the tyro than to find when, after a long and fatiguing walk, he arrives at his destination, that he has left either his lens, or camera screw, or some other important piece of apparatus behind. To avoid mishaps of this nature, it will be a good plan to write out a list of the following articles, which will always be required, on a stout card, and glue it to the inside of the cover of the camera case. If the articles are then, one by one, packed in the order of the list it will be practically impossible to leave anything behind. We shall require to pack up and take the following articles:—

The camera.

The lens.

The double dark slides, charged with plates.

The tripod head.

The tripod legs.

The focussing cloth.

The camera screw.

A note-book in which to record our exposures.

I have not, up to the present, said very much about that most important subject—the sensitive plate, but it now becomes necessary to devote a few words to it. The manufacture of gelatine dry-plates is at the present time a most important industry, and though (presumably by the process which is known as "the survival of the fittest") the number of actual manufacturers is considerably less than it was a few years ago, the plates which are now issued to the public are, almost without exception, of very high quality. Therefore it matters very little what particular make of plate the tyro selects. Every photographer has a partiality for a particular make of plate, and the reader will probably find, if he were to put the question to four different photographers, "Whose plates are the best?" that he will get as many different opinions. Personally, I have a partiality for Edwards' Isochromatic plates, but as their manipulation involves the exercise of more care than the beginner would be likely to bestow, he had better make his first exposures upon some ordinary plate of good quality, such, for instance, as the "Castle."

Assuming, therefore, that a box of plates has been procured, we take them, with the dark slides, into the dark-room, and having carefully closed the door, and put the non-actinic screen in position, we may proceed to charge our slides. To do so we unfasten the brass clips which hold the two portions of the slide together, and carefully dust the interior with the broad camel-hair brush, laying the opened side flat upon the table. We then open the box of plates, undo one of the brown paper packets in which they are packed, and, taking the topmost plate, we carefully dust its surface, and proceed to lay it, face downwards, in the dark slide. We do the same with the next plate, and after buttoning down the blackened tin division, we close the slide by folding its two sides together, and refastening the brass clips. Having filled the remaining two slides in a similar manner, we carefully re-pack the unused plates, taking special care to avoid scratching the films, or touching them with the fingers, which would probably cause unsightly marks in the negatives. The dark-room door may then be opened, and we are literally ready for work. The novice will possibly be in doubt at first as to which is the film side of the plate, therefore it may be well to state that the film or coated side of the plate is always less glossy than the uncoated side.

Having packed our traps, we may set out in quest of our first picture. I do not, at this stage, intend to offer any advice on the subject of art, believing that to do so would only tend to bewilder the student, and distract his attention from the purely technical details of the subject, which, in my opinion, he should first thoroughly master. Our only aim, therefore, at present will be to make several experimental exposures on suitable subjects with a view of gaining a little practical experience in the proper use of the apparatus, and also in the development of the negative.

This being so, we need not for the present concern ourselves with "rules of composition," "balance," "light and shade," and the thousand and one artistic considerations which at a later period of our photographic career will probably engage our attention.

Very little time, therefore, need be spent in selecting a suitable subject for our first exposure, although, in order that we may gain as much instruction as possible in the proper use of our apparatus, it would be well to include in the view a house or a building of some kind. We will



assume, therefore, that some such subject as this is chosen—a country house, with a background of trees and distant hills, the foreground being composed of a garden with a fence in the immediate front. Probably, if we were to allow artistic considerations to weigh, we should prefer to exclude the uninteresting fence, but for our special object, namely, learning the proper use of our apparatus, it will prove helpful rather than otherwise.

The point of view having been selected, we proceed to erect the tripod, taking care, in doing so, to tightly clamp all the screws, and to extend the legs sufficiently apart to give steadiness. The camera may then be taken from the case, the baseboard let down, and secured by tightening the brass struts at the side, it being finally firmly fixed to the tripod head by means of the brass screw which is provided for the purpose. When the lens has been attached, by screwing it into the flange which should have been fixed to the rising front of the camera, we shall be ready to make our first exposure. Having removed the lens cap, the reader may throw the focussing cloth over the camera, taking care, of course, not to obscure the lens, and proceed to arrange the picture upon the plate. He will at first probably be able to distinguish nothing but a hazy outline of the subject, but if he will place his hand upon the focussing screw, or pinion, at the side of the camera and gently turn it, first towards him, and then away from him, he will find that the image on the ground-glass screen gradually becomes more distinct. Let him now carefully watch one portion of the picture—for instance, the house, which occupies what would be called in technical language the middle distance, and carefully turn the pinion until it appears sharp and clear. It is assumed that the index on the ring which adjusts the diameter of iris diaphragm has been in the first instance placed opposite the denominator marked  $f/8$ , which is the largest opening of the lens. Having focussed the house sharply, he will also observe that both the fence in the foreground and the trees behind the house are, more or less, indistinct and fuzzy. This experiment will show him that a photographic lens is only capable, when used with large stops, of giving sharp definition in one plane, for if he readjusts the pinion, and so gets the fence sharp, he will find that the house in turn becomes as fuzzy as the fence was previously. If, however, he revolves the ring on the lens mount until the index points to  $f/22$ , and again examines the image, he will find that each plane of the picture, the fence, the house, the trees, and the distant hills all appear crisply defined, or, in photographic language, in sharp focus. He will also note that although the definition has been improved, the brightness of the image has considerably diminished. It will thus be easily seen that the function of a stop or diaphragm is twofold, namely, to improve definition, but in the same ratio to increase the duration of exposure. The reader will do well to keep to the use of one sized stop in making his exposures until he can with some accuracy determine the correct time to allow. There is no magic in  $f/22$ , or in any other particular sized stop, but that number will be found to give good general definition without being so small as to necessitate an unduly long exposure.

The cap should now be replaced upon the lens, and the ground-glass frame being folded back upon the top of the camera, the double-back marked "1" and "2" may be removed from the case (the focussing cloth having been previously wrapped round it) and slid into the groove provided for the purpose at the back of the camera, the focussing cloth being still kept over all, in order to prevent the slightest chance of the plates being affected by light. This having been done the hand may be placed underneath the cloth and the

shutter of the dark-slide carefully drawn out to its full extent. The plate will then be ready for exposure.

This question of exposure is a most difficult matter upon which to give practical assistance in a handbook. It is true that by consulting one or other of the many ingenious exposure tables which have been devised the reader with a taste for mathematics may derive some assistance, but those who are not so skilled will probably prefer to dispense with such aid. For my own part, at this early stage of his novitiate, I think their use would tend more to confuse the reader than render him assistance. In ascertaining the correct exposure without resorting to the use of an exposure table the photographer is naturally compelled to rely mainly upon his judgment, a quality which the novice lacking the necessary experience obviously cannot be presumed to possess. The main factors which guide the photographer are, namely, the size of the stop, the brightness of the light, and the rapidity of the plate. It should always be borne in mind that the success of the photograph will depend to a great extent upon the accuracy of the exposure; therefore the novice should carefully note the conditions under which he works, so that he may compare the results obtained one with another. Here the last item on our list of requisites for outdoor work comes to our aid—the exposure note-book. The pages of this will be found to be ruled off under separate headings, such as "lens," "light," "subject," etc., and these should be filled up after making each exposure, and after the plates have been developed, the results obtained, whether good, bad, or indifferent, should also be recorded for future guidance.

But after this discussion it is time that we exposed our plate. Assuming it to be a bright summer's afternoon, about four o'clock, we remove the cap, and counting "one," "two," quickly replace it. To make sure, as this is our first experiment, we will make a second exposure, this time giving a slightly longer one. We therefore close the shutter and turn the little wire clip to prevent it being accidentally withdrawn. The dark-slide is then drawn out of the groove in which it fits, and turned over, so that the side with the ivory tablet marked "2" is towards the inside of the camera. We now proceed in a precisely similar manner to expose the second plate, the only difference being that in this case we count 4 sec. instead of 2. After we have in the same way exposed a third plate, giving, however, 6 sec. exposure, we can replace our apparatus and return to the dark-room. Our object in making several exposures upon the same view is to demonstrate, when we come to develop the plates, the effects of under and over exposure, so that we may obtain as much instruction in our first practical lesson in taking a photograph as possible. Correct exposure will, of course, always be our aim; but if we err, it should be on the side of over rather than under exposure—for this reason, that whereas a possible result may, with care, be obtained from an over-exposed negative, nothing can be done with one which is under-exposed.

(To be continued.)



**Hexham.**—The monthly meeting was held on the 1st inst., Mr. J. Pattison Gibson presiding. The Council announced that Mr. Charles E. Straker, High Warden, had been unanimously elected President for the ensuing year; and that Mr. Jasper Gibson and Mr. Barrass R. Reed had been elected Vice-Presidents. After the business of the society had been transacted, Mr. C. C. Hodges opened a discussion on "Printing Papers and their Management." In a very interesting and instructive manner Mr. Hodges clearly and carefully pointed out the advantages of the various papers, both as regards permanence and beauty of result; and a number of members joined in the discussion. The members then handed in prints of their own production for criticism; and the Hon. Secretary (Mr. John Gibson, jun.) showed some prints on the new Ilford paper, which were much admired by the members.



# ILLUSTRATED SUPPLEMENT,

## MARCH 11, 1892.

### Monthly Competition, No. 33, "Sea Pieces and River Scenery."

ACTON M. (Pau).—"Dargle Bridge." R.R.,  $f/22$ ; 6 sec., August, dull, 3.30; Ilford ordinary; albumenised paper. "This is my second competition; I am a fourteen months worker." A good picture spoilt by halation.

AINSWORTH, W. G. (Alton).—"Yacht leaving Harbour." Laverne's,  $f/9$ ; instantaneous, August, bright, 11 a.m.; Castle. A good print of a by no means easy subject.

ANDERSON, W. S. (Edinburgh).—"Rosyth Castle at Sunset." Lancaster's,  $f/22.6$ ; 4 sec., August, a red sunset, 6 p.m.; Ilford; Ilford gelatino-chloride P.O.P. paper. "The light was red, hence the long exposure on the rapid plate, as well as the sky also coming out on the same plato as the water and castle. The castle is on the north side of the Forth, near the Forth Bridge." Another effective study in light and shade, but of a displeasing colour.

DUFF, E. A. (London).—"On the Colne, Rickmansworth." R.R., 8 in. focus,  $f/16$ ; 2 sec., August, dull, noon; Ilford ordinary; Alpha. This competitor deservedly takes the Silver Medal for a luminous study of cows standing in the water, which show extremely happy grouping.

ANNESLEY, E. (France).—"River Scenery." Rapid symmetrical,  $f/16$ ;  $\frac{1}{2}$  sec., December, bright sunlight, 3 p.m.; Ilford. Rather a flat print, or it might have scored.

ARROWSMITH, H. E. (Sussex).—"Upper Ffrwdgrech Falls." Lancaster's,  $f/20$ ; 4 sec., June, bright sunlight, 12.45; Ilford ordinary; Obernetter's gelatino-chloride printing paper. A very poor print, which shows evidence of the camera having been shaken by the wind.

ASHLEY, G. R. (N. Wales).—"River Scenery." R.R., smallest; 7 sec., October, good light; noon, Edwards's. Far too dark in the right-hand corner, and the whole print suffers from a sickly yellow tinge.

AUSTIN G. (Anerley).—"A Fair Wind Home from Fishing." R.R.,  $f/11$ ; snap shot, September, bright, 11.30; Ilford P.O.P. A very effective instantaneous shot.

BANKS, P. F. (Norwich).—"Getting up Steam." Dallmeyer,  $f/22$ ; 1 sec., July, sun behind cloud; Ilford; platinotype. Flat and poor, both technically and artistically.

BAIN, MRS. E. G. (Italy).—"A Rough Day." Steinheil; instantaneous, September, 11.30 a.m.; Lumière. "On the day I took these photographs there was blowing such a gale of wind it was almost impossible to stand steady long enough to get even a shot at the sea." Two straight lines converging towards the centre of the picture, the horizon cutting the print in two, and the whole flat and over-printed.

BALL, F. R. (London).—"Millport." Lancaster's,  $f/10$ ; 1-10th sec., April, dull, 1 o'clock; Castle; platinotype. The print gives one the impression of midnight, and the horizon cuts the picture in two.

BALLARD, CHAS. (London).—"On the Corrib." R.R.; snap February, fair; Ilford medium rapid; silver. The print measures  $2\frac{1}{4}$  in. by  $1\frac{1}{4}$ , and is an extremely pleasing little bit.

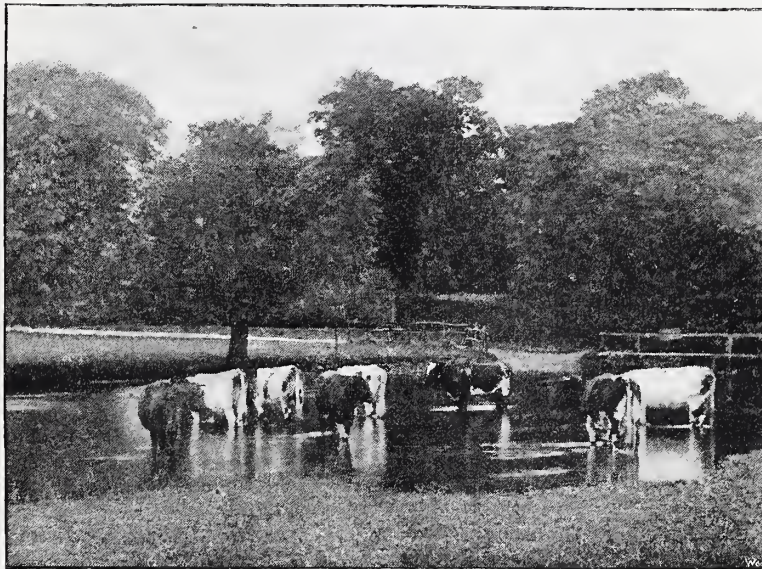
PARNEWELL, C. F. L. (Staffs).—"On the Dane Valley." Lancaster's,  $f/22$ ;  $\frac{1}{2}$  sec., diffused light; Thomas T. C. R.; platinotype. A very good print which came very near the front rank.

BARTON, THOMAS. (Clapham).—"Devon River." Horne, Thornthwaite, and Wood's R.R.,  $f/45$ ; 1 sec., bright sun;

Ilford ordinary; platinotype. A flat, sunless print with an inch too much foreground.

BAUMONT, C. R. (Rochdale).—"On the Dee at Berwyn." Steinheil's R.R.,  $f/18$ ; 3 secs., August, fairly bright, 4 p.m.; Ilford ord.; Ilford P. O. P. "The subject here represented was taken from the railway embankment on a rather windy day. I waited something like half an hour for an opportunity to expose. The right-hand corner bears evidence of wind." A very good print technically, but a little too much has been included.

BEEDEE, W. A. (Aberdeen).—"Still Water." Lancaster's  $f/20$ ; 4 sec., May, dull morning; Ilford ordinary. At least  $\frac{1}{2}$  in. too much foreground, and without any object of interest.



No. 1.]

"ON THE COLNE, RICKMANSWORTH."

[E. A. Duff.

SILVER MEDAL.



BELFIELD, H. (Bristol). Single lens,  $f/9$ ; Paget plate, 50. This was taken on a dull, gloomy morning this month." A fearfully overprinted, poor print.

BENNETT, G. E. (London).—"When we were Boys." R.R.,  $f/16$ ; 4 sec., August, bright, 5 p.m.; Ilford ordinary; gelatino-chloride of silver. An opportunity missed; had one or two of the boys been sitting down so as to have broken up the group, it would have been perfect.

BETJEMANN, F. R. (London).—"Norway,"  $f/8$ ; instantaneous, fair; Mawson; bromide. "Taken with Ideal hand-camera." A good technical print, with just a little too much foreground.

BIRBY, W. H. (Blackburn).—"Any more for an hour's sail?" French R.R., full aperture; Sept., moderate light, showery, distance misty, noon; Ilford ordinary. "Taken under difficult circumstances; waited two hours for the combination: much bothered by curious people; the distance was dark and misty, and smoky, near a railway terminus." A very good print, but with a very curious hazy distance, which does not look natural.

BILTON, C. P. (Waterford).—"Dunmore East Pier." Single; cap off and on, August, good light, afternoon; Ilford ordinary. "Dunmore East is a small village at the mouth of Waterford Harbour." A little too flat and formal in composition.

BLAKE, A. H. (Windsor).—"The Frozen Thames." Ross R. S.,  $f/22$ ;  $\frac{1}{2}$  sec., January, sunny, 11 o'clock; Wratten instantaneous; bromide. A good snow picture, but too many straight lines.

BOOTH, J. A. (Reading).—"A Rainy Day at Goring." R. R., half-plate,  $f/32$ ; 3 sec., June, 1891, very good, 4 p.m.; Thomas' extra rapid. "Taken from the bridge connecting Goring and Streatley, looking down stream, strong wind high up, not so bad at lower level." The foreground should have been sharp, and the water is far too white, but a very good print, taken as a whole.

BOTTOMLEY, J. M. (Tunbridge Wells).—"The Corbiere." Voigtlander Eury-scope and shutter,  $f/32$ ; 1-5th sec., December, sun on one side, rain on the other, 1 o'clock; Mawson's; silver, lime. "The rain came down very heavily about one minute after this picture was taken; the sky in the negative of this print is not put in and is untouched. This is the first time I have shown a print for competition." A good seapiece, but showing curious markings across the print which do not add to the beauty.

BOWEN, F. E. W. (Bournemouth).—"By the Sad Sea Waves." Rapid rectilinear,  $5\frac{1}{2}$  focus,  $f/15$ ; shutter (about 1-25th sec.), February, noon, cloudy; Mawson and Swan's rough bromide. A good cloud study, recalling midnight rather than mid-day.

BOWLES, MRS. H. (London).—"Fishing Boats at Tenby." Swift's Rapid Paragon,  $f/16$ ; shutter exposure, August, good

light, 3 o'clock; Ilford red label. An inch and a half too much foreground, and the boats are far too black.

BRADBURN, S. J. (Manchester).—"The Aber Valley." R.R.,  $f/22$ ; 6 sec., August, dull, 4 p.m.; Ilford ordinary. Far too black on the left-hand side, otherwise a good print.

BRANDRETH, B. (Hoylake).—"Pont-y-pair." R.R.,  $f/16$ ; September, clear, shortly after sunrise; platinotype hot bath. A very good full-plate study, but could be improved by a little more brilliancy in the print.

BRIDGES, A. J. (Lynn).—"Walks Rivulet." Two seconds, November, rather dull, half-past one; ordinary Ilford; Ilford printing-out paper. "The above-named picture was photographed with a guinea camera from Marlow's, Birmingham, with its ordinary lens and stops." A flat, over-printed picture.

BROUGHTON, E. (Eaton Square, S.W.).—"Sea Urchins." Swift's detective Paragon; September, afternoon, good; Ilford.

An oval print with sixteen boys in it, every one of whom stares into the lens.

LESLIE, F. (Edinburgh).—"After the Spate." Rapid rectilinear; medium; 2 sec., October, fairly good light; 2 o'clock; Castle; platinotype. "As will be observed, the spot photographed was not well lighted, and stands low among high trees. The water had been in flood, leaving trees standing in water." Technically one of the best platinotypes in the competition, and deservedly takes the bronze medal.

BROWN, J. H. (Warrington).—"A Busy Spot." Optimus R.R.,  $f/24$ ; 2 sec., April, good, 10.30 a.m.; Ilford ordinary; Ilford printing-out paper. "The view represents the canal leading into Widnes, with ships loading chemical produce. The mounting is my own work." Technically a very good print, though somewhat dark, but decidedly weak artistically.

BRYANT M. (London).—"Ramsgate Lifeboat." Single,  $f/32$ ; 5 sec., clear, but not bright, 7.30 a.m.; Fry's; printing-out paper. By no means a bad little study, but technically atrocious, as the



No. 2.]

"AFTER THE SPATE."  
BRONZE MEDAL.

[F. Leslie.

negative probably is smothered with little black spots.

BURR, H. (London).—"On the Medway." Grubb's single aplanatic,  $f/11$ ; 1-20th sec., July, bright sunlight, noon; Ilford ordinary. The right-hand bank is far too black, and the barge should have been allowed to go a little further, and an inch less foreground would be an improvement.

BUTCHER, F. E. (Blackheath).—"Folkestone Pier." R.R.,  $f/24$ ;  $\frac{3}{4}$  sec., September, dull, midday; Ilford ordinary; ordinary silver, gold. "This view was taken from the edge of the cliffs under rather difficult circumstances, the wind being so high that I had to get a friend to hold the camera while I made the exposure at the risk of getting blown over." Technically a good print, but artistically very poor.

CAMPBELL, H. W. (Glasgow).—"The Busy Stream." Lancaster's,  $f/20$ ; 5 sec., weak sunlight, 2.40 p.m.; Ilford ordinary;



Ilford printing-out paper. If two inches had been cut off the left-hand side of this picture, and a fisherman had replaced the gentleman in the hard felt hat, it would have been improved.

CANEVALI, J. H. (Liverpool).—"On the Canal." Taylor and Taylor's  $\frac{1}{2}$  plate,  $f/20$ ; 2 sec., July, bright, 4 p.m.; Ilford ord. Enlargement from quarter to half plate. The enlargement was given an exposure of 35 minutes with stop 16, same lens. Disqualified as by Rule 3.

CARRUTHERS, G. A. (Birkenhead).—"River, Co. Down." Half plate, R.R.  $f/32$ ; 3 sec., December, winter sunlight, 11 a.m.; Ilford ordinary. A very fine study which received considerable praise from the judges.

CAVE, C. J.—"Weybridge." Optimus, 10 by 8 R.R.,  $f/18$ ; 1 sec., September sunlight, 1.30; Ilford ordinary. This view was taken at the junction of the canal. A good picture spoilt by using too large an aperture, and want of brilliancy.

CHALLIS, O. E. (Brookley, S.E.).—"The Ravensbourne." Rapid rectilinear, Perken, Son, and Rayment,  $f/32$ ; 4 sec., June, bright but not sunny, 4 p.m.; Thomas's extra rapid; bromide paper. "One of my first bromides, using the iron developer." A very neat little study, and technically a very good print.

CHAPMAN, E. H. (Manchester).—"The Return of the Voyagers." Single landscape,  $f/16$ ; shutter, July, bright sunshine, 11 a.m.; Ilford rapid. "The lens and shutter were the ones that I got with the Underwood's Instanto camera I bought. The print is cut down from half-plate." Much too deeply printed, and the distance is too distinct and clear.

CHAMPNESS, A. J. (Sydenham).—"Ilfracombe." Single; 3 sec., June, bright, 11 a.m.; Wratten and Wainwright ord.; silver, gold. Spoilt by the pink paper and the hideous line on the right-hand side of the picture.

CLARK, E. (Surrey).—"A Shady Stream." Stanley half-plate R.R.,  $f/32$ ; February, dull, 12 o'clock; Ilford; bromide paper. Good bromide quarter-plate, which would have been improved by shifting the camera a little to the right and by omission of the figure.

CLARKE, T. (Surrey).—"Hanmer Pond." Stanley. "Taken on a very windy day." Half an inch too much foreground and wanting brilliancy.

CLARKE, W. J. E. (Kent, Sidecup).—"River Cray, Kent." Wray,  $f/8$ ; 1 sec., April, sunlight, 3 p.m.; Ilford ordinary. An under-exposed quarter-plate print spoilt by the two formal lines of the bridge.

CLARKE, R. N. (Bishops Auckland).—"Redburn Bridge." Single,  $f/10$ ; 5 sec., Nov., rather misty, 11 a.m.; Ilford ordinary; albumen. Flat and over-exposed, an inch too much foreground, and an extremely offensive figure.

CLEMENCE H. (London).—"On the Esk." Wray's R.R.,  $f/22$ ; 4 sec., Aug., rather weak light, 4 p.m.; Ilford ordinary; platinotype.—"I took up photography three years since, and practised for six months, but having legal examinations to

prepare for, put it aside until the last year, when I again returned to the fascinating art. My first competition." The print is a great deal too dark, and the whole of the composition leans to one side.

CLIFFE, W. T. (Yorkshire).—"South Sands and Harbour." Wray's R.R.,  $f/22$ ; one-fifteenth of a sec., Sept., sunlight, 12 o'clock; Paget; Ilford printing-out paper, Ilford formula. A fearfully black and white print, and spoilt by about a dozen boat-masts all parallel.

COOPER, P. J. (Darlington).—"Waiting for a Rise." Lancaster's,  $f/28.5$ ; 4 sec., Aug., diffused light, 12 a.m.; Ilford ordinary; silver, borax. This is a favourite pool for salmon fishers on the River Esk. A good picture spoilt in the printing process; a matt-surface print on chloride paper would have been an improvement.

COOPER, W. H. (Bacup).—"On the Trent." Lancaster's,  $f/20$ ;  $1\frac{1}{2}$  sec., July, fairly good, afternoon; Ilford ordinary; silver, borax. An inch too much foreground, and fearfully over-exposed.

COULSON, G. (Sheffield).—"The Leafy Boughs." Ross R.S.,  $f/32$ ; 4 sec., July, very bright, 4.30; Ilford ordinary; albumen, acetate, carbonate soda. An under-exposed print, and spoilt by the obtrusive tree trunk.

STEPHENS, CHAS. (London).—"Rams-gate Harbour." Rapid,  $f/11$ ; shutter, December, sunshine, noon; England's; Mawson's bromide. "Light was very good for the time of year. Several gulls were about that day." A very good print, and full of life and motion, and awarded the certificate.

CREMER, C. (Kent).—"River Scenery." Wray's 5 by 4,  $f/32$ ; 2 sec., Aug., good light, 12 o'clock; Ilford ordinary. "This is my first attempt at this kind of competition. Have started work some twelve months. Shall be glad of criticism."

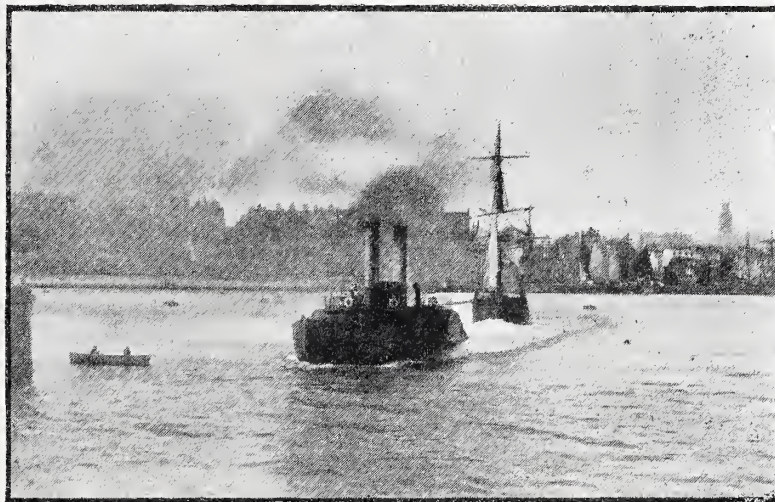
Technically a very fine print, but the boat load should have been in the right-hand corner, and the distance rather less sharp.

CROWLEY, H. T. (Sheffield).—"The Derwent, Hathersage." Watson's  $\frac{1}{2}$  plate R. R.,  $f/16$ ; 9 sec., Aug., diffused light, 6 p.m.; Ilford ordinary. "This negative was developed with hydro-quinone." A good technical print of a well-known spot which could be improved by about half an inch less foreground.

CROZIER, J. W. (Hexham).—"Watching the Trout." Optimus R. R.,  $f/16$ ; 30 sec., June, diffused, 4 o'clock; Ilford ordinary; Ilford printing-out paper, Ilford formula. A very pleasing half-plate print, very much in the style of Mr. J. Paterson Gibson, of this town. Technically the print might have been a little brighter.

CUNNINGHAM, T. A. (Greenock).—"Rosa Burn." Taylor's,  $f/22.6$ ;  $1\frac{1}{2}$  sec., Aug., diffused light, 1 p.m. A good panoramic sketch, but far too much foreground.

D'ALBERTANSON, A. C. (Windsor).—"The River Foyers, Inverness-shire." Lancaster's,  $f/12$ ; 2 sec., July, fairly good, 3 p.m.; Ilford ordinary. "This view is taken just above the Upper Falls of Foyers, Loch Ness." Technically a very fine



No. 3.]

RAMSGATE HARBOUR.

[Chas. Stephens.

CERTIFICATE.



print, but there is a little too much on the right-hand side of the picture, or it should have been broken up by a figure.

D'AUBAN, E. (London).—"Outward Bound." Lancaster, Open, Lancaster Instantograph; May, very clear sky, rather weak sun, 2.30; Fry's; Ilford Alpha paper. "This was my first shot with a hand-camera. It is a Lancaster quarter-plate Instantograph in a cardboard box covered with brown paper. The steam tug is towing a collier out of Shoreham Harbour." Too much foreground and wanting in clouds to give relief. As this competitor sent in two prints, both were disqualified.

D'AUBAN, E. (London).—"Near Old Windsor." Lancaster's, open; 4 sec., June, bright sun, 1 o'clock; Ilford extra rapid; Ilford Alpha paper. "This picture was taken on a little island opposite Windsor Bridge, with a quarter-plate Lancaster Instantograph." A half-plate print of an unusual view of Windsor, all out of focus, with an offensive figure in the foreground, and printed on pink paper.

DAVIES, MISS C. V. (Milford Haven).—Ross rapid symmetrical,  $f/22$ ; 1-16th sec., September, sunshine, 11 a.m.; Ilford ordinary. Artistically a very pleasing print, but printed a little too deeply.

DAVIS, H. J. B. (Bristol).—"Scene up the Frome, Bristol." Ross R. Sym.,  $f/16$ ; 17 sec., October, fair, 4.15 p.m.; Thomas' thickly. "This was taken on a dry but somewhat dull day." This probably would have given far more pleasing impression if taken the other way of the plate.

DEAKIN, R. (Ashton-under-Lyne).—"River Scene in Cheshire." R.R.,  $f/16$ ; 9 sec., September, dull, 4.30 p.m.; Ilford ordinary; Ilford P.O.P. An inch and a half too much foreground, and the water a little too bright in the centre.

DEAN, S. (Huddersfield).—"Seascape." Wray's R.R.,  $f/18$ ; shutter, 1-30th sec., July, good, 2.30 afternoon; Ilford ordinary; Ilford P.O.P. "The above was taken at Dunoon with ordinary hand-camera held in hand, and the negative was developed with pyro and soda." A very effective bit, but printed too deep.

DEAN, A. S. (Yorks).—"A Glimpse of the River Wharfe." Rapidsymmetrical,  $f/32$ ; 3 sec., August, rather strong light at the time, 3 p.m.; Ilford ordinary; platinotype. "This is the first time I have sent a print in for competition." Wanting in clouds to form an opposing line to the sloping hills.

DENISON, E. F. (Devon).—"Dittisham on the River Dart." Ross,  $f/45$ ; 2 sec., June, bright sunshine, 10.45 a.m.; Ilford ordinary; bromide paper. A half-plate bromide from a negative for which too small a stop was used, and which has some very curious-looking clouds in it. Printed far too deep, and the boat and the old man are in the wrong place.

DIGGLE, S. (Manchester).—"On the Medway." Wray R.R.,  $f/22$ ; 4 sec., August, diffused, 11 a.m.; Wratten and Wainwright ordinary. "Had only six months' experience when taken. Accident to mount whilst packing, and had to cut away and mount all together on mount herewith." Far too much foreground, and we should like to have seen the rest of the bridge. Technically, a very good print.

DILLON, MISS E. (Oxford).—"River at Burford." Dallmeyer,  $f/20$ ; 1 sec., October, sunlight, very windy, 4 p.m.; silver, borax. Wanting in any sharp plane of focus, and the blaze of white light down the centre of the picture cuts it in two.

DOWLING, THOS. (Glasgow).—"Eventide." R.R.,  $f/32$ ; 11 sec., October, diffused red, 4.30 p.m.; Excelsior; bromide, eikonogen. A very effective result has been obtained.

DREW, J. (Sodbury).—Ross; diffused light, 4 sec.; Thomas' ordinary. "Fere aquosissima sunt quæcunque umbrosissima." A very good subject, but a matt-surface chloride print would render it better, and suggestive of "the flowing stream and shady glen."

DUTTON, R. H. (Crewe).—"On the Dee." Lancaster's,  $f/20$ ; 1 sec., August, sunshine, 11 a.m.; Ilford ordinary; Ilford bromide. Far too black on the right-hand side, and an inch and a half too much foreground.

ELLSWORTH, W. S. (Huyton).—"Newbury Bridge, Lake Side, Windermere." Taylor,  $f/32$ ; 3 sec., September, bright sunshine, 2 o'clock; Ilford. Technically a good print, but  $1\frac{1}{2}$  in. off the foreground would have improved it.

EVANS, A. (Liverpool).—"Evening at the Mouth of the Mersey." Long focus R.R.,  $f/20$ ; 6 sec., February 13th, fairly good diffused light, 5 p.m.; Ilford ord.; Ilford P.O.P. "I had to wait until the sun just disappeared behind the clouds on the horizon, and then uncapped the lens." A very good print and very characteristic of the place, but clouds would have improved it.

EVANS, J. W. (Wolverhampton).—"On the Conway." Lancaster's,  $f/32$ ; 4 sec., August, good sun, 3.30; Aristotype. A pretty little quarter-plate, but spoilt by the obtrusive leaves at the top and side.

EVERETT, H. (London).—"The Wreck of the Annie." Lancaster's,  $f/12$ ; 1-40th sec., August, very dull, 9.30 a.m.; Ilford; Ilford P.O.P. "Saw the wreck driven ashore and crew landed by means of line, then borrowed tradesman's cart and drove into town and got the camera; then back to beach, and from deck of fishing smack made five exposures, of which four turned out about like enclosed. Tremendous gale; my brother and fisherman holding camera firm." An interesting subject, and evincing considerable energy and enterprise on the part of the operator.

EYRE, H. S. W. (Sussex).—"Reeds and Bushes." Lancaster's rapid,  $f/30$ ; 6 sec., August, dull, 5.30 p.m.; Ilford, silver print, borax and gold. An effective little picture made out of nothing.

FAWCETT, MISS C. (Durham).—"Beddgelert." R.R., 64; 4 sec., September, sunny, 11.30; Ilford ordinary, platinotype. "A cloudless day, so I have only put in a very light sky." This has been printed in the sun, and is consequently rather flattened.

FEATHERSTONHAUGH, F. B. (Ennis).—"The Forth Bridge." Lancaster's single,  $f/30$ ; 4 sec., February, dull, 2.30; Ilford rapid. A fearfully over-exposed quarter plate does not include the whole of the bridge, and is over-printed and over-toned.

FERGUSON, Alex. (Islay).—"View in Loch Tarbert." Taylor's R.R.,  $f/22$ ; 2 sec., September, diffused sunlight, 4 p.m.; Ilford ordinary. Rather a happy piece of grouping, but would be considerably improved by clouds and sunning down of the water.

FITTON, J. R. (Oldham).—"The Meeting of the Waters." Wray's R.R.;  $f/32$ , 5 sec., June, sunlight, 2 p.m.; Castle plate; Ilford printing-out paper. "I have not printed clouds in, as I think it looks better without." A very fine specimen of technical and artistic work, and highly commended by the judges.

FLEGG, F. A. M. (Hampstead).—"Wilford Bridge." Swift's  $f/32$ ; 2 sec., Sept., bright diffused light, noon; Ilford rapid. Part of the bridge is cut off, and it has no pretensions to artistic work.

FOGWILL, ALLAN (Portsmouth).—"A Weir on the Ems at Westbourne, Sussex." Lancaster's, full aperture; weak band on shutter; March, sun just bursting through clouds, 12.30; Ilford. Two inches at least too much foreground, all out of focus; if this were cut off, it would be considerably improved.

FRANCKE, A. F. W. (Jersey).—"Watersmeet." Ross P. S.,  $f/32$ ; 8 sec., May, sun, 4.30; Ilford ordinary; silver print, borax and gold. "Watersmeet, Lyn Valley," so called on account of the waters of the east and west Lyn meeting at this place. The cascade on the right of the picture is formed by the waters of the West Lyn, which passes under the rustic bridge and then joins the east river. A little too dark on the right-hand side, and the peculiarly fuzzy trees at once attract and offend the eye.

FRERE, MISS C. T. (Norwich).—"A Stormy Evening." 1 sec., September, sunlight between heavy showers, 4 p.m.; Ilford rapid; platinotype. An effective study of light and shade completely spoilt by irregular markings on the print.



FULLER, W. A. (Upper Norwood).—"On the Thames." Watson's R.R.,  $f/16$ ; 2 sec., May, dull, 2 o'clock; Thomas's T. C. E. R.; Ilford P. O. P. A little over-toned, and the exposure might have been reduced with advantage.

GADDUM, MRS. S. E. (Altrincham).—"Badcall Bay." Dallmeyer's R.R., full aperture;  $\frac{1}{2}$  sec., December, bright noon; Wratten and Wainwright. A platinotype half-plate, with far too harsh contrast.

GALLOWAY, A. (Aberfeldy).—"The Croy Pool." Swift's,  $f/16$ ; 2 sec., May, sunshine, 5.30 p.m.; Ilford ordinary; Eastman's bromide. "My first bromide. I enter this competition not in the expectation of gaining a prize, but to obtain the benefit of your criticism." This print requires at least  $1\frac{1}{2}$  inch off the foreground, is flat, has no distance and no object of interest.

GEEKIE, A. (Angus).—"Old Bridge of Cally." R.R.,  $f/32$ ; 12 sec., Sept., sunshine, 4 o'clock; Ilford ordinary; silver. A good matt surface print of this on white paper ought to be a great deal more pleasing.

GEEKIE, S. G. (Angus).—"A Bit on the Tay at Stobhall." Landscape,  $f/32$ ; 5 sec., August, sunshine, 3.30; Ilford ordinary; silver. A little too low in tone, but decidedly effective, and could be improved by a lighter distance.

HEATH, WALLACE (Shrewsbury).—"On the Wharfe." Lancaster's Instanto,  $f/32$ ; 5 sec., Sept., good light, 2 p.m.; Thomas's thickly-coated. "Taken in Bolton Woods on one of those rare days in 1891 when there was no rain or wind about. It is a very charming spot for photographers." And a very charming print Mr. Heath has given us.

GIBSON, J., JUN. (Hexham).—"She Stood by the Side of a Beautiful Stream." Ross,  $f/16$ ; 15 sec., October, soft evening light, 4 p.m.; Ilford. "Taken on the North Tyne one still afternoon when the leaves were beginning to fall and to change colour." This competitor is worthily following in the steps of his father, and had we not been told the contrary, we should have said this was his father's work.

GLAZEKIRK, F. K. (Liverpool).—"River Dee." Ross 10 by 8 R.R.; platinotype, hot bath. A very effective study indeed; here we really can see the rush and swirl of the water.

GOOCH, C. F. (Cardiff).—"Bathing at Low Water." Ross' rapid symmetrical,  $f/11$ ; 1-16th sec., August, sun shining, noon; Thomas's extra rapid. "Clouds shown on print are on the same negative." This is a subject which cannot well be treated by photography; it requires an artist's brush and colour to give it life.

GODDING, J. H. (Newbury).—"The Kennett at Hampstead." Wray's 5 by 4,  $f/8$ ; 1-5th sec., Oct., good light, 12.30; Ilford ordinary. "Taken with a Norden Flap shutter with a weak elastic band. Plate developed with pyro and ammonia. The slight trace of cloud is in the negative." About half an inch off the foreground and a little more distinct sky would have been an improvement.

GOODWIN, A. (Shepherd's Bush).—"Weir on the Colne." Taylor's R.R.,  $f/32$ ; 2 sec., February, fairly good, noon; Castle; silver, borax and gold. "Dull, cloudy day, with sun bursting through occasionally." Far too formal in composition and too much foreground.

GREENE, G. (London).—"Optimus R.R., 7 by 5,  $f/32$ ; off and on, June, bright sun behind camera, 11 a.m.; Eastman's bromide. "Had to wait about twenty minutes for sun to come out. Taken on banks of Avon. I have never exhibited or taken a prize." At first sight we took this to be a study in hoar frost, but as the competitor states that it was taken in June we suppose we are wrong.

GRIFFITHS, E. (St. Columb).—"Queen Elizabeth Rock." R.R., medium; quickest cap, August, slight rain, 7 a.m.; Ilford bromide. A good print of a difficult subject, a little too black.

GROVE, T. A. (Newport).—"Half-plate single,  $f/22$ ; 2 sec., August, bright, October; Ilford ordinary. "This print was not got up for competition, having been done months ago; it was taken in a 5 by 4 camera." An inch and a quarter can well be spared off the foreground of this print.

HALLETT, C. F. H. (London).—"Royal Military Canal." "Optimus" R.R.,  $f/24$ ; 3 sec., June, dull, 11.30; Ilford ordinary; Ilford P.O.P. Technically a very good print, but artistically a little too much foreground.

HARRIMAN, J. (Henley).—"The Thames." R.R.,  $f/12$  drop, August, sunshine, 4.30 p.m.; Mawson's bromide paper. "This is really nearer to Ship-lake station (G.W.R.) than Wargrave." Evincing careful work both technically and artistically.

HARDWICK, A. J. (Taunton).—"On the River Tone." Lancaster's,  $f/32$ ; 3 sec., February, weak sunlight, mid-day; Ilford ordinary; Ilford printing-out paper. "The plate, which is untouched, was developed with pyro and ammonia, and the print squeegeed on to ground glass." Far too deeply printed and without artistic merit.

HARRIS, C. J. (Plymouth).

—"River Plym." Taylor and Taylor's,  $f/32$ ; 7 sec., March, very good light, 3.30 p.m.; Ilford ord.; ordinary silver paper. A very good little study, which could have been improved by being taken the other way of the plate, and by rather less foreground.

HARRISON, E. H. (Isle of Man).—"Early Morning at Douglas." Optimus 10 by 8 Euryscope,  $f/11.3$ ; 1-10 of a sec., August, diffused sunlight, 7 a.m.; Ilford special rapid. Chloride printing-out paper. "The clouds are in the original negative, no combination printing of any kind, negative print not touched. The white in the foreground was caused by a small steam launch." A fine effect, but a little of the foreground could be spared.

HAWES, W. S. (Aberdeen).—"Aberdeen Breakwater." Single,  $f/18$ ; August, bright sunshine, 3 p.m.; Verel's; Ilford. "A very fine wave study indeed, one of the best in the competition.



No. 4.]

ON THE WHARFE.

[Wallace Heath.



HENDERSON, W. G. (Liverpool).—"On the Eden, near Carlisle." Newton's; October, 9 sec.: printed on artist's paper. A pleasing print, which would be improved by not such deep printing.

HINDE, C. H. (Southport).—"The Avon and Pulteney Bridge." Ross's R.S.,  $f/16$ ; 1 sec., May, bright light, 11 a.m.; Castle. Too much foreground, and the bridge is too far off.

HOGLEY, J. R. (Huddersfield).—"Wet Morning, Scarborough." Ross's,  $f/2$ ; drop shutter, July, moderate light, no sun, morning; Ilford ordinary; Ilford printing-out paper, carbonate of soda. The figures and boats are far too black, all want dodging in printing.

HORSBURGH, E. M. (Edinburgh).—"A Busy Day at Crail." Ross's R.R., open lens; 1-20th sec., August, sunlight, 3 o'clock; Ilford ordinary. A very good print, but too much has been given up to the foreground.

HURRELL, R. (London).—"A Sea Tramp." Waterbury lens,  $f/20$ ; fraction of a sec., August, good light, noon; Wratten's drop shutter; bromide. "Taken with a Waterbury hand-camera at Ostend: negative developed with a Belgian developer. Negative untouched, atmosphere natural, not

owing to the drought." A fine platinotype, and good artistically.

JAMES, A. (S. Wales).—"A Devonshire Harbour." Ross's rapid symmetrical,  $f/16$ ; drop shutter; June, bright, midday; Thomas's extra rapid; platinotype hot process. A great deal too black, and wanting in the brilliancy necessary to give one the idea of sunshine.

JOHNSON, I. C. (Gravesend).—"Bridge, Maidenhead." Ross,  $f/32$ ; 2 sec., September, sun shining, 11.30 a.m.; Ilford ordinary, Ilford printing-out paper. A whole-plate print, of which two inches off foreground might be spared, thus cutting out the hand-camera man.

JONES, G. J. (Malton).—"Riverside, Malton." Ross's rapid symmetrical,  $f/16$ : 3 sec., June, dull, 4 p.m.; Britannia; silver. At least two inches too much foreground, without any object of interest.

KINGSFORD, R. L. (Cambridge).—"Sunset at Fistrel Bay."  $f/20$ ; instantaneous, October, dull, 5 p.m. "The photograph was taken with a quarter-plate Shew's Eclipse hand-camera. The day was stormy." The fine effect is spoilt by black spots and irregular markings.

MYERS, E. (Keighley).—"The Aire in Winter." Optimus,  $f/32$ ; 20 sec., Dec., slight fog, 2.30 p.m.; Ilford ordinary, Ilford printing-out paper. A very fine study of hoar-frost, to which our block, No. 5, hardly does justice.

LANGTON, Miss C. R. (Liverpool).—"A River in Co. Louth." Lancaster's,  $f/11$ ; instantaneous, September, bright sun, 11.30 a.m.; Ilford ordinary; platinotype, hot bath. A little too flat and rather under-exposed.

LEWIS, GEORGE (Tunbridge Wells).—"On the Stour." Dallmeyer's rapid,  $f/25$ ; sun, 5.2 p.m.,  $2\frac{1}{2}$  sec.; Edwards. "Yellow sun just off lens front."

LIFFEN, J. (Gorleston).—"River Scene." Euryscope; no maker's name,  $f/11$ ; instantaneous, September, good light, 4.15 p.m.; Fry's. Considerably under-exposed; the whole of the left side wants shading whilst printing.

LOVEJOY, H. T. (Durham).—"Spa Bridge." Single,  $f/20$ ;  $4\frac{1}{2}$  sec., February, sunshine, 11.30 a.m.; Ilford ordinary; albumen, borax. "A beginner of about four months." A bit of the bridge only is included; and is far too deeply printed. A very poor print.

LYONS, Miss A. H. (London).—"On the River Derwent." Lancaster,  $f/20$ ;  $\frac{3}{4}$  sec., September, sunlight, 11.30 a.m.; Ilford ordinary. A very much under-exposed bromide print of a good subject.

MCGREGOR, P. (Aberfeldy).—"View on the Tay." Taylor and Taylor's R.R.,  $f/64$ ; 35 sec., Feb., sunshine, 12.30; Ilford ord., in diffused light; borax toning bath. Under-exposed and too much foreground, and no artistic merit.

MCSAAC, THOS. (Isle of Man).—"Mona's Isle." Wray,  $f/11$ ; instantaneous, August, good light, 4 p.m.; Paget 50 times; Eastman's bromide. "Taken with a Facile hand-camera fitted with a Wray single lens." A good instantaneous shot, but would be improved by clouds and more detail in the foam.

MACKIE, G. (Brehin).—"Lancaster's,  $f/11$ ;  $\frac{1}{2}$  sec., May, dull, 4 p.m.; Ilford ord. A clever piece of posing, and with a little more brilliancy the print would have come out one of the first three.

MACMILLAN, M. (Scotland).—"Port Bannatyne Bay." Lancaster's lens,  $f/12$ , iris diaphragm; instantaneous, August, good sunshine, and fleecy cloud; Ilford extra rapid. The panoramic view with fine clouds, but otherwise without merit.



No. 5.]

THE AIRE IN WINTER.

[E. J. Myers.

dodged." By no means a bad instantaneous shot, but the body of the boat is far too black and heavy.

HUTTON, W. K. (Kilwinning).—"The White Bridge." Quarter inch; 30 sec., July, little sunshine, 3 o'clock; Ilford ordinary; pink sensitised paper. "This is my first attempt at landscape photography." And by no means a bad one either.

HYDE, ROBERT (Manchester).—"Cross the Bay." French rapid rectilinear,  $f/13$ ; instantaneous, July, bright sunshine, 10.30 morning; Thomas's extra rapid; Ilford rough bromide. A very fine print technically, although the sail in the foreground is a little too white.

IYE, E. V. (Henley-on-Thames).—"Park Place." Single,  $f/16$ ; drop, August, sunshine, noon; Mawson plate; silver paper. "Had not developed a dozen negatives when this was taken, only been learning a short time." Considering this statement, the result is very good; there is a little too much foreground.

JACKSON, E. J. (St. Andrew's).—"Pass of Leny." Dallmeyer's R.R.,  $f/24$ ;  $\frac{3}{4}$  sec., May, sunlight, 3 p.m.; Ilford slow. "A bright clear day, view well-lit, though perhaps rather too much from behind. The River Leny was exceptionally low,



MACLEOD, R. C. (Hayward's Heath).—"Dunvegan Head." R. R., 7 in. focus,  $f/16$ , 20 sec., November; Eastman's bromide paper. A technically good print, and suggestive of the lines—

"It was a wild and breaker-beaten coast,  
Guarded by shoals and rocks as by a host."

McMURDO, JOHN (N.B.).—"Calder Waterfall," Lancaster's,  $f/16$ ; fair light after rain, July, 8 sec.; albumen, silver. The whole of the upper part of this spoilt by halation, the lower part under-exposed.

MACNAIR, MISS F. E. (Ayrshire).—"On the Brathay." Lancaster's,  $f/24$ ; 1 sec., June, fair, 6.5 p.m.; Edwards'; silver. "The light was not strong enough for the instantaneous shutter." Half an inch too much foreground, and the boats are on the wrong side.

MAITLAND, VISCOUNT (Lander, N.B.).—"The Earnsclough." Rapid rectilinear,  $f/16$ ; 3 sec., August, sunshine, 3.30. A brilliant, sunny print, with too much out-of-focus foreground.

MALE, E. W. (Hunts).—"A Bend in the Ouse in Ely." Fallowfield's 5 by 4 landscape,  $f/18$ ; 1 sec., August, sun clouded, it being a dull, windy day, 2.30; Ilford ordinary. A flat, uninteresting bromide print—too much foreground and too much sky.

MARRIOTT, E. L. (Bootle).—"At Sundown, o'er Land and Sea." Optimus R.R.; shutter, Sept., bright, 4.55 p.m.; Ilford ordinary. An effective half-plate study, and containing some very fine cirrus clouds.

MARSHALL, J. T. (Richmond).—"Chatsworth." Lancaster's,  $f/8$ ; instantaneous, Sept., sunshine, noon; Richmond; bromide. A time exposure would have secured greater detail, but I wished to obtain the ripples on the water, and avoid movement of the cattle. Just half an inch less foreground would improve it, and the negative wants dodging.

MASON, ED. (Yorks).—"Lancaster's,  $f/22$ ; 1 sec., Aug., dark, stormy day, 11 a.m.; Ilford ordinary. "This photograph was taken during the last great flood we had; the river overflowed its banks and the whole dale was flooded. I stood on a heap of washed-up dirt to make the exposure, and felt considerably relieved when I landed safely back with my camera." A very effective study, and highly commended by the judges.

MEADWAY, F. W. (Ramsgate).—"Ramsgate Harbour." Paget; quick shutter, 3 p.m., July; pyro and ammonia developer (maker's formula). Camera of my own make constructed as a hand apparatus. Far too much foreground, otherwise good.

MEASURES, J. W. (Todmorden).—"Weir on the Hebden." R.R.,  $f/22$ ; 9 sec., Sept., bright, 1.30; Ilford ordinary. "The river is situated in a deep ravine, making it difficult in places to secure any sky; a very beautiful autumn day. Long exposures absolutely necessary. The only practicable path lies between the rocks in the foreground. The whole ravine is a charming one." A very fine study, but a little dodging of the water in the foreground and the distance would have improved it.

MOAT, WM. (Staffordshire).—"Fairy Glen." Dallmeyer; 2 sec., Aug., bright sun, 9.40 a.m.; Ilford; silver. A very good print of a well-known spot, but the point of view chosen is a little weak in the foreground.

NIBLETT, MISS J. (Ledbury).—"Weir on the River Leadon." Atkinson's R. R.,  $f/16$ ; 3 sec., September, 3 p.m.; Edwards'; silver, borax. Half an inch too much foreground and considerably under-exposed.

NICOL, ED. (Perth).—"Quarry Mill Dam." Lancaster's Instantograph,  $f/32$ ; 9 sec., June, dull, 2 a.m.; Paget xxxxx.

Rather an over-exposed print, and could be improved by more careful printing.

NORTON, J. W. P. (Sheffield).—"On the Rivelin." 5 by 4 Optimus R. R.,  $f/32$ ; 5 sec., August, dull day, 2 p.m.; Ilford ordinary; ordinary sensitised paper. A good picture spoilt by vignetting, and too much foreground.

NYE, H. (London).—"A Breaking Wave." Lancaster's,  $f/10$ ; slow shutter exposure, August, bright sunshine, 9.40 a.m.; Ilford ordinary; platinotype. "Taken with great difficulty, a strong wind blowing at the time." A very fine and faultless wave study.

OGDEN, T. (Manchester).—"Happy Moments." Half-plate R. R.,  $f/8$ ; 1 sec., September, fairly bright, 2 o'clock; Ilford; Ilford printing-out paper. "The River Bane, Tattershall, and is the result of my first two months' experience." This would have been considerably improved by stopping down, and by rather less formal composition.

OGILVIE, A. M. (Glasgow).—"Brig o' Strowan." Taylor and Taylor's,  $f/32$ ; 8 sec., September, diffused light, 1 p.m.; Wratten and Wainwright inst.; Blanchard's. "The negative was developed with pyro and ammonia according to formula of



No. 6.]

BETWEEN THE SQUALLS.

[H. N. Popham.

Wratten and Wainwright." A very good print, but could have been improved by a figure.

POPHAM, H. N. (South Shields).—"Between the Squalls." Underwood's,  $f/16$ ; instantaneous, February, very cloudy, 3.30 p.m.; Edwards'; Ilford printing-out paper, chloride of gold. "The plate was exposed between two heavy showers of snow. On the horizon heavy masses of clouds, and just as I exposed, the snow came down in a regular blizzard." Another good wave study, reproduced in No. 6, with real water and not cotton wool.

PARKER, J. (Hereford).—"Ringwood." Dallmeyer R. R.; 2 sec., March, good light, 12.45; Wratten's inst. A whole-plate print which requires a little less foreground and a little more brilliancy.

PARTRIDGE F. (Cornwall).—"Dark Tintagel by the Cornish Sea." Lancaster's,  $f/20$ ; 1 sec., October, sunlight, 1 p.m.; Ilford ordinary. A half-plate silver print, printed far too deeply.

PEARCE, W. B. (Wednesbury).—"River Tame." Rapid rectilinear,  $f/22$ ; 2 sec., February, sunlight, 2 p.m.; Ilford ordinary; silver. Quarter-plate print of good technical work, but, artistically, decidedly poor.



PELLECHET, M. (Paris).—"Lake of Geneva." Rectilinear,  $f/25$ ; 30 sec., October, setting sun, 4.45 p.m.; Lumiere. "The sun was setting behind a mountain in the rear of the camera, and the subject was in the shade, except the part on the right hand, where some rays were still shining on the water. I was obliged to intensify the negative, and used Edwards' intensifier." A very good scene, typical of the country, but with an inch too much foreground.

PIM, J. E. (Belfast).—"The Silver Rhine." Optimus R.R.,  $f/44$ ; fast shutter, July, sun, 4.15 p.m.; Ilford ordinary. "This was taken at Dordrecht on my last summer holidays in Holland, across the river, in the usual way, almost at the sun." A very fine effect of light and shade. More suggestive of moonlight than sun.

PIRIE, G., (Elgin).—"Below the Mill-race." Single landscape,  $f/11$ ; 8 sec., February, dull, 3.10 p.m.; Ilford special rapid; gelatino-bromide. "This is my first attempt at a snow scene and at bromide printing." A quarter-plate print, the less we say about which the better.

POLLARD, W. (Canterbury).—"The Stour." Swift's,  $f/8$ ;  $\frac{1}{4}$  sec., August, sun shining, 11 o'clock; Ilford ordinary. "This is half of a stereoscopic picture. Fordwich is three miles from Canterbury." A very fine little study, with about half an inch too much foreground. Came very near winning a prize.

POTTER, J. G. (Worthing).—"Boat House." Ross R. V.,  $f/20$ ; 1 sec., July, cloudy, no sun, 12 o'clock; Ilford ordinary; Ilford P. O. P. "Good light, no sunshine or wind, negative probably over-developed with pyro and ammonia." Brilliant half-plate print, with far too much foreground.

POWELL, J. A. (St. John's Wood).—"Aground." Euryscope,  $f/8$ ; instantaneous, September, sunlight, 11 sec.; Ilford ordinary; Eastman's bromide paper. Half-plate bromide print, considerably over-exposed in the negative.

PRINGLE, W. (London).—"Near Sewardston." R. R.,  $f/32$ ;  $3\frac{1}{2}$  sec., March, diffused light, 2 p.m.; Ilford ordinary. "The above was taken on a very stormy day, snow and sunshine alternately." A very good little picture, cut from half-plate; wanting clouds to complete it.

RAMSEY, G. M. (Surrey).—"Richmond Bridge." Euryscope,  $f/8$ ;  $\frac{1}{2}$  sec., February, heavy clouds, with sun breaking through at intervals, 11 a.m.; Morgan and Kidd rapid. "Instead of putting my hand camera on the shelf to wait for brighter days, I thought I would this winter try some work with it, and I send a specimen for your opinion." A successful little picture, very much after the style of Mr. Cembrano.

READER, W. T. (Scarborough).—"Gathering Storm Clouds Veil the Sun's Rich Splendour." R. R.,  $f/22$ ; 2 sec., February, good light, 9 a.m.; Ilford medium; Ilford P. O. P. A very good effect of light and shade.

REDWOOD, T. H. (Chingford).—"The Thames at Tilbury." Single,  $f/20$ ; 1-8th sec., August, 3.40 p.m. "Taken from landing-stage in front of the Tilbury Hotel." A little too deeply printed, but evincing careful work.

RENDELL, H. (Devon).—"When the Tide is Low." Wray's  $5\frac{1}{2}$  R. R.,  $f/16$ ;  $\frac{1}{4}$  sec., Aug., diffused light, 11 a.m.; Edwards'; Ilford P. O. P. "The picture was taken at Limpstone, near Exmouth. The solitary rock in the picture is called 'Darling's Rock.' Natural sky." Quarter-plate silver print, in which an opportunity of making a picture has been missed.

RHAGG, A. (Newcastle-on-Tyne).—"Cliveden Woods." Ross' R.S.,  $f/32$ ; 5 sec., August, diffused light, 4 p.m.; Ilford ordinary; Ilford printing-out paper. Technically a very good print, but would have been improved if taken the other way of the plate and more of the lodge had been included.

RUDGE, A. H. (Wolverhampton).—"On the Banks of the Stream." Lancaster's,  $f/16$ ;  $\frac{1}{2}$  sec., May, very bright light, 5.35; Ilford; Ilford printing-out paper. Same formula as sent with paper. This would be considerably improved by slightly sunning down the water in the right-hand corner.

RUDGE, H. N. (London).—"Watson's R.R.,  $f/11.3$ ; 1-20th sec., September, diffused light, noon; Ilford ordinary." Taken from a sailing wherry on Southampton Waters, with ordinary camera held in hand. This was my first attempt at instantaneous work, and was done within seven weeks of my commencement." Technically a good print, but not having much artistic merit.

ROSS, G. F. (Sidmouth).—"On the Tay." Lancaster's quarter-plate,  $f/16$ ; 3 sec., August, diffused light, 3.30 p.m.; Ilford white label; gelatino-chloride. "I have had my camera for about a year, and I am now thirteen years old, and I got all my knowledge from the 'Beginners' Guide to Photography.'" Printed a great deal too deep, and would be more pleasing if of a matt surface. Technically good, and the sunlight in the distance is very fine.

RICHARDSON, Mrs. J. T. (Nottingham).—"Coylum Bridge."  $f/40$ ; 5 sec., September, diffused light, 11 a.m.; Ilford ordinary. An artistic picture spoilt by want of care in printing.

RILEY, G. (Handsworth).—"River Avon and Boats." Optimus R.R.,  $f/16$ ; 8 sec., July, sunset, 7.50 p.m.; Thomas's extra rapid; silver, borax. "The sun had just set, everything was still, not a ripple on the water; view was taken from the old bridge; I think it is called the Mythe bridge." A half-plate print, of which at least 2 in. might be spared from the foreground.

SAICH, G. H. (Waterford).—"Lancaster's,  $f/25$ ; 3 sec., Feb., not very bright light, 10 a.m.; Excelsior; Ilford printing-out paper. Bad, both artistically and technically.

SALMOND, P. R. (Cambridge).—"Outward Bound." Lancaster's, open aperture; instantaneous, August, diffused light, 12 o'clock; Ilford ordinary. A good instantaneous study, but possessing no special merit.

SAVAGE, G. A. (Folkestone).—"Folkestone Fishing Smack." Shepherd,  $f/16$ ; shutter, one of my own construction; September, sunshine, 3.30; Ilford ordinary; Marion's, borax. "The clouds in the above picture I have put in from another negative; one of my first attempts, having had but little experience in this branch." The clouds are by no means suitable, and spoil the picture.

SCOTT, A. (Stratford).—"The Rollers." Lancaster's,  $f/20$ ; shutter, June, sunlight, 3 o'clock; Ilford. A poor, flat print of a good subject.

SEAMER, E. H. (Bury St. Edmunds).—"Chimney Mills." Lancaster's,  $f/32$ ; 6 sec., September, diffused light, afternoon, Ilford ordinary; silver, borax and gold. "The picture enclosed was my first attempt at river scenery after a month's experience in the art." Pleasing print, which could be considerably improved by clouds.

SEDGWICK, J. (London).—"Winter." R. R.,  $f/11$ ; 1-6th sec., good light, 3.30; Ilford ordinary; Ilford bromide. "This is my first attempt at snow scenes." And by no means a bad one either. There is a little too much foreground, and the boy should have been on the other side.

SHIMWELL, H. (Birmingham).—"Evening." Lancaster's,  $f/32$ ;  $\frac{1}{2}$  sec., August, bright diffused light, sun behind cloud, 5.30 p.m.; Mawson's "Castle" plate. "Plate was developed with pyro ammonia, metabisulphite of potash, and afterwards intensified to strengthen the contrast." A very effective study of light and shade, which we should have liked to reproduce, only it is a little too difficult.

SMALLRIDGE, CHAS. (Devon).—"On the Erme." Optimus R.R.,  $f/24$ ;  $3\frac{1}{2}$  sec., February, diffused light, 2 o'clock; Phoenix; Fallowfield's chloride paper. A little too flat, or it would have been perfect.

SMITH, H. S. (Bradford).—"A Quiet Corner." Ross single,  $f/32$ ; 3 sec., August, good light, midday; Fry's ground-glass. "This subject would be better matt-surface, but I was pushed for time, or would have sent one." A little too deeply printed



and would also have been improved if the distance had been less distinct.

SMITH, Jos. (Newark).—"View on the River Trent." R. R.,  $f/32$ ; 3 sec., April, fairly good, 3.30; Ilford ordinary; Ilford bromide. "The exposure of bromide print is 55 sec., 15 in. from an ordinary paraffin lamp. I have not taken more than one dozen views in my life. I go in more for portraits, which I hope to have a try at soon." An under-exposed half-plate, which would be improved by an inch less foreground.

SNOWBALL, G. S. (Newcastle-on-Tyne).—"Ryton Ferry." French R. R.,  $f/22$ ; 6 sec., August, medium, 5.30; Castle; Ilford gelatino-chloride paper, gold toning. A good print spoilt by over-toning, and the water is far too white.

SPALDING, F. W. (Norwich).—"A Quiet Corner on the Wensum." Ross; 6 sec., August, sun shining, 3 o'clock; Ilford ordinary. "The subject of the picture is a bend in the river Wensum at the commencement of what is known as Weston's Reach." A poor print of by no means a pretty spot.

SPILLER, A. L. (London).—"Fall on the River Cryffe." Lancaster's,  $f/22$ ;  $1\frac{1}{2}$  sec., August, good light, 11.30 a.m.; Marion's ordinary; gelatino-chloride paper. "The river Cryffe runs through the village of Bridge of Weir, 13 miles from Glasgow." A very good picture, which could be improved in the printing.

SOLTON-SYMONS, G. H. (Plympton).—"Ilford Bridge, on the Stour." Ross R.S.,  $f/32$ ; 1 sec., April, bright, 4 p.m.; Wratten and Wainwright's instantaneous; Ilford printing-out paper. A fine picture, but which could have been improved by a little less foreground, and rather more on the left side of bridge.

STACY, F. H. (Sheffield).—"View on the Derwent."  $f/11$ ; 2 sec., June, inclined to be dull, 4.30; Marion. One of the best brook scenes in the competition.

STAMP, S. (Stockton-on-Tees).—"Shrimping." Optimus R.R.,  $f/24$ ; drop shutter, June, strong diffused light, 1.30; Ilford ordinary. A picture missed, the figures being wrongly placed.

STEIN, JAMES (Shepherd's Bush).—"Evening." Rapid rectilinear,  $f/64$ ; 15 sec., September, fair light, 6.30; Mawson's Castle; bromide. A half-plate bromide all out of focus and too much foreground.

STOREY, T. J. (Cumberland).—"Underwood's,  $f/32$ ; 12 sec., July, sun behind camera, 2.30 p.m.; Ilford ordinary. "My first attempt at a competition." A very good print which came very near taking a prize.

STOREY, R. D. (Kewick).—"A Peep at Derwentwater." Lancaster's; 2 sec., February, moderate light, 2.10 p.m.; Mawson and Swan's Castle; platinotype. "Taken when the sun was behind a cloud, foggy in distance." An effective little arrangement in black and white.

SUTHERLAND, J. W. (Newcastle-on-Tyne).—"The Ouseburn." Optimus R.R.,  $f/24$ ; 25 sec., March, bright light, 3 p.m.; Thomas' ordinary; Ilford printing-out paper. A good picture, but the water is far too white, and the prominent tree trunk is offensive.

THOMPSON, R. H. (Manchester).—"Coast." Lancaster's; 1 sec., July, bright light, but sun obscured, 2 p.m.; Thomas' extra rapid; albumen. Quarter-plate print, the distance of which is as sharp and distinct as the foreground, which is not pleasing.

TINSWORTH, W. (Staffs).—"Leaving Harbour." Laverne,  $f/9$ ; instantaneous, August, bright light, 11 a.m.; Castle; Aristotype. "The above was taken with Swinden and Earp's hand-camera as the boat was leaving Douglas." It is a little unusual for the sea to run up the horizon, as in this print, which is not improved by the pink paper.

TOD, L. (Midlothian).—"Snow scene." Shew's,  $f/11$ ; 12; 3 sec. February, bright diffused light, 12 o'clock; Edwards's; platinum. "Two days before this photograph was taken, the temperature was over 50 degrees, and buds were beginning to appear; the succeeding night we had about 15 degrees of frost. Too much foreground, and spoilt by the printing process.

TOWNSHEND, C. (Rossett).—"Llangollen." R.R.,  $f/32$ ; 4 sec.,

March, bright, diffused light, 4 p.m.; Wratten and Wainwright instantaneous; Obernetter. A little too deeply printed, but is decidedly pleasing in composition.

TRENCH, E. F. C. (Ireland).—"Puffin Island." Lancaster's R.R.,  $f/22$ ;  $\frac{1}{2}$  sec., August, weak sunlight, 4.30 p.m.; Ilford ordinary, platinotype. A good platinotype print, which might have been taken the other way of the plate with advantage.

TUCKER, W. T. (Isle of Man).—"Evening on Douglas Bay." June, midday, diffused light; Paget; Swift's 12 in. R.R.,  $f/8$ ; fast; borax and gold.

WILLIAMS, J. N. (Lonsdale).—"Wray's rapid rectilinear,  $f/32$ ; 6 sec., Feb., very dull, 1 o'clock; Ilford ordinary, bromide, iron. "Snow was falling very fast, all very gloomy in consequence. Lens very wet, and focussing screen so wet no very exact focus could be taken." The snow is far too white, and the print is stained yellow.

WATERS, J. (Keighley).—"Lancaster's Instantograph half-plate,  $f/13$ ; weak sunshine and clouds, February, cap off and on quickly as possible; Ilford ordinary. A very good print, considerably improved by the aid of the brush.

WATSON, Miss M. (Italy).—"The Port." Lancaster's,  $f/30$ ; 6 sec., February, dull light, 11 a.m.; Ilford ordinary; hot platinotype. Too deeply printed, and composition too formal.

WEBLING, A. H. (Brighton).—"Threatening Weather at Spithead." Taylor's R. R.; 1-20th sec., June, 10 a.m.; hot bath platinum paper. "This was taken from the deck of a steamer going full speed. The man o' war in foreground is H.M.S. *Rodney*. The coast line of the Isle of Wight is just visible in the distance." The steamer is far too small to warrant such a size print. Fine clouds and a good instantaneous shot.

WESTLAKE, G. H. (Sheffield).—"The Porter Brook." Lancaster's,  $f/16$ ; 5 sec., July, bright sun after heavy rain, 9 a.m.; Ilford ordinary; Ilford P.O.P., Ilford amm. sulph. cyn. "This plate was exposed when I had been photographing just seven months. It had been raining heavily for an hour, and then rapidly brightened." A good picture spoilt by halation.

WHITAKER, C. E. (Thornton Heath).—"Runswick, Yorkshire." Optimus R.R.,  $f/32$ ; 4 sec., July, dull, 1.45; Ilford ordinary; platinum. "This was taken on a wet day, just as the clouds were lifting; it had been raining all morning, but had left off about an hour before I exposed this plate." Had a figure or two been introduced prominently into this, it would probably have won a prize.

WHITE, G. (Salisbury).—"A Misty Morning." Ross, R. S.;  $10\frac{1}{2}$ ;  $f/32$ ;  $1\frac{1}{2}$  sec., August, misty, sun shining through, 7.30; Ilford; silver. Notwithstanding the title, one does not gather the idea of a misty morning from the print.

WHITE, R. C. (Llanelli).—"River Lledr." Taylor and Taylor's R.R.,  $f/22$ ; 10 sec., October, dull day after rain, 2 p.m.; Wratten and Wainwright's ordinary; ordinary silver paper. Far too formal in composition, and not improved by the vignetting.

WILLIAMS, D. R. (London).—"The Thames at Shepperton." Lancaster's,  $f/13$ ; snap shot, September, medium sunlight, 3 p.m.; Paget; Aristotype. "Taken with home-made hand-camera; half-plate Lancaster's circular shutter. My first attempt at competition, so please criticise. Negative developed with Paget pyro formula." Too deeply printed, so that one loses the effect of sunshine which should be there.

WILLIAMS, Miss E. M. (London).—"River Lynn." R.R.,  $f/44$ ; 2 sec., August, dull, 4 p.m.; Ilford ordinary; silver, borax. A difficult subject, which could be improved considerably by dodging in printing.

WILLIAMS, G. S. (Kent).—"The Black Brook." Lancaster's,  $f/30$ ; 25 sec., Feb., dull and misty, 1.30 p.m.; Edwards' instantaneous; Kallotype, No. 2. I had to stand in the steam, two of the camera legs were in the water, and one doubled in half on the bank." There is a little too much foreground, and the print is very flat.



WILLIAMSON, JAS. (Brighton).—"Entering Shoreham Harbour." R.R., Rouch,  $f/11$ ; 1-50th sec., May, sunshine, 11 a.m.; Ilford ordinary, Ilford printing-out paper. A good instantaneous shot just wanting in brilliancy.

WILSON, MRS. A. M. (Kendal).—"River Mint, Westmoreland." Rouch's detective,  $f/25$ ; February, bright sunlight, 11 a.m.; Thomas' extra rapid; Aristotype. A good study printed too deeply, and better results, we think, would have been obtained had it been taken the other way of the plate.

WILSON, G. F. (Lonsdale).—"Wray's,  $f/32$ ; 6 sec., February, very dull, 1 o'clock; Ilford ordinary; bromide, iron. "Very dull; snow storm; could not see to focus lens, and screen all wet." A flat, over-exposed bromide print; something could be made out of it with more careful printing.

WILSON, H. W. V. (Liverpool).—"Lancaster's,  $f/20$ ; 1 sec., October, sunlight, 12.30; Ilford ordinary. "The enclosed photograph was taken by me during a short time I spent at the lakes. The stream is situated just outside the village, and I believe is the same that carries the water from the Stock Ghyll Force." Technically and artistically a fine print, but a little too much foreground.

WOODS, G. (Hastings).—"Nerissa's Last Voyage."  $f/15$ ; quick shutter, November, good light, 9.30; Thomas's; gold. An interesting subject of a wreck on shore, but the clouds, which are printed in, are not lit from the same way as the sea. Half an inch off the right side and a little off the foreground would have improved it.

WORDLING, J.C. (N. B.).—"Thalia." Taylor's,  $f/16$ ; snap, July, diffused light, 1.15 p.m.; Paget. "Thalia, cutter yacht, Y. R. A.; rating, 40, R. N. Y. Club; racing flag, blue with white star. This snap-shot was taken during the match between *Crocle* and *White Slave*, at the R. N. Y. Club Regatta at Rothesay, 4th July, 1891." The best instantaneous study in the competition.

WRIGHT, D. A. (Torquay).—"Watersmeet." R.R.,  $f/22$ ; 7.5 sec., May, dull light, 4.15 p.m.; Ilford ordinary. "Taken between showers of rain." A good picture spoilt by being too flat.

YOUNG, F. (Isle of Wight).—"A Stormy Day." Single stereo lens,  $\frac{4}{5}$  focus, open aperture; 1-30th sec., August bad light, dull day, 11 a.m.; Ilford; Ilford bromide paper. "This is merely a hand-camera shot taken with home made camera. Negative untouched." Quarter-plate print,  $\frac{1}{2}$  in. too much foreground, and certainly not carrying out the title.

The Competition again has been very heartily supported, and we are pleased to note that as a whole the quality of work is far superior to that of No. 32. Still, there is yet considerable room for improvement, notably in the choice of printing process, trimming down of pictures, and mounting. Many competitors send in prints merely for criticism, without any hope of getting near an award, and while we do not personally object, we would point out that this is hardly the intention of the Competition. We would far rather criticise the prints in our editorial columns, as the work in connection with these competitions is exceptionally heavy.

**Wolverhampton.**—The monthly meeting was held on the 1st inst., Mr. H. Holcroft in the chair. One or two notices for alteration of rules were given to be brought forward at the annual meeting. A number of sample packets of Eastman's bromide paper were distributed amongst those members who promised to bring results to next meeting. Mr. J. Gale exhibited a home-made enlarging camera, and explained the working. Messrs. Fry and Co. loaned to the society for this evening some two dozen lantern slides, all of these being selections from figure studies by Rejlander, and as most of these were local figures, more interest than usual was centered in them. Mr. H. M. Smith had also loaned to the society some seventy or more slides taken by the Kodak camera, amongst them being some very fine specimens of what one can turn out with a Kodak hand-camera. Messrs. W. Ratcliff, T. W. Derrington, and the Hon. Secretary (J. W. Evans) exhibited a number of slides illustrating different shades and colours, which can be obtained by various makes of plates and developers, etc.

## Photographic Exposure.\*

By A. YOUNG.

In the summer I had a great number of amateurs use my dark-room, and, as a rule, they all had different modes of working and used a different maker's plate. I was invariably asked my opinion as to which I thought the best. My advice was that if they had procured a good, reliable plate, and got well into the working of it, to stick to that make of plate, as by making many changes they would be apt to get into a muddle, and should they possess a good formula for their particular brand of plate, there could be no advantage in changing it, as by so doing they would not improve their negatives, but only obtain indifferent results. I have several times been asked by an amateur when looking through some of my negatives, how I managed to get the exposure of the different subjects so correct, and whether I used any table for calculating exposures, as it was called. My reply was that I religiously avoided all so-called calculation tables, and found that the only way to become perfect in anything was by practical experience alone; I had always observed that those who made the most elaborate notes and the minutest calculations made the worst muddles. A very good system of working is to carefully oil the focussing screen with a little sweet oil, afterwards removing as much as possible of the latter with a dry duster, then the finest detail can easily be seen without any trouble. The only system I use for obtaining the correct exposure is by observing and noting the amount of shadow on the focussing screen. If you expose for the shadows, the "high lights" will take care of themselves. Of course, the deeper the shadows the longer the exposure, and the nearer you approach the object you wish to photograph the longer the exposure required; and the further away from the object, the less exposure it will want in proportion. My usual guide is the amount of light and shade on the focussing screen. Exposures could not be made mechanically.

There is another point that is not always taken into consideration, for instance, the general colour of the object. In architectural photography some houses are black with dirt and age, others are new, or are built with grey stones and cement of a very light colour; the latter would not require nearly so much exposure as the house where the bricks were dark and dirty. Take as another illustration a moor scene with furze bushes of a dark colour, and a hay field. The latter in a good light might want a shutter exposure, whilst the former would require several seconds to get all the detail well out. You generally see on your packets of plates, "Sensitometer No., 20 or 24," as the case may be. I have always found these figures quite useless, just thirty times or sixty times what I supposed them to mean the rapidity of wet collodion plates, and in my experience quite useless, as it would not work. A very good plan, and the one I adopt to obtain correct exposure, is to stick to one make of plate for special subjects, and not to use every maker's plate in the market; I have found that different makers of plates generally require different exposures. Some friends of mine had begun by using a certain maker's plate, but on starting for their holidays bought several dozen plates of another maker, and exposed some fifty or so, but when they came to develop them, found to their chagrin that they had over-exposed the lot, no doubt being mystified by the number of sensitometer or the label on the box, or they perhaps calculated the exposure by somebody's system.

The best plan to adopt when going in for a new make of plate is to try several first, and see how they really do work before making a start.

Of course, in a good many cases where the exposure is not correct it could in the hands of an experienced amateur or professional be rectified in the development, if the exposure is not too far wrong either way. But by far the best plan is to get the same correct if possible, and that knowledge is to be gained by practical experience alone and a careful study of the light and the nature of the subject to be photographed.

\* Read before the Lowestoft and District Photographic Society.



## Reviews.

*Travellers' Colloquial Italian.* By H. Swan. Published by David Nutt, 271, Strand, W.C. Price 1s.

This little handbook, the third of the "Phonetic" series, forms a useful guide to Italian pronunciation and Italian travel generally. The author has in this, as in the French and German books, tried to give in English the true pronunciation of the liquid tongue of the sunny south, and it forms a welcome addition to the library.

*Taschen-Kalendar für Amateur Photographen.* By Dr. A. Miethe. Published by Rudolf Muckenberger, Berlin.

First of all we have here a diary for personal notes, then a brief summary of the progress of photography, and a complete but concise guide to all the necessary apparatus and manipulations of photography, several useful tables, and an exposure notebook. Certainly to the German amateur one of the most useful of annuals.

*Bromide Paper, Instructions for Contact Printing and Enlarging.* By Dr. E. A. Just. Translated by W. E. Woodbury and H. Snowden Ward. Price 1s.

Dr. Just's "Leitfaden für den Positiv Entwicklungs-process," etc., has long been known to us, and now we have the same anglicised, but, we venture to think, half-heartedly. Take, for instance, in speaking of Auer's Incandescent Gaslight, why should not the English firm be noted? There are several errors, notably p. 70: "solution of ammonium sulphate for sulphite, which, though it may be a printer's error, is one likely to mislead a novice. Then, again, we note that Dr. Bannow's method of displacing hypo by salt is recommended, a process long since exploded, and which should have been cut out by the translators. The work is a useful one, and, although somewhat jumbled up, notes on chloride papers being inserted here and there, it will be welcome. It contains a fine frontispiece on Eastman paper, from a well-known negative by J. B. B. Wellington, and has numerous illustrations in the text, which here and there is decidedly anglicised German rather than English.

## Catalogues.

FALLOWFIELD'S PHOTOGRAPHIC REMEMBRANCE AND TRAVELLER AND PHOTOGRAPHIC TIT BITS. Post free.

As usual, this comes to hand full of new things and good things, and certainly contains "a startling novelty," in the shape of a new ferrotype dry-plate camera, complete with aspirator and tank, by means of which brilliant ferrotype pictures may be turned out in one or two minutes in constant succession. A new revolving cutting table, a new non-actinic medium, celloidin emulsion paper, a new enameller, a new cup-and-ball tripod head, and a new spring clip and tube for the dark-room water supply.

ARCHER AND SONS, 43 to 49, Lord Street, Liverpool.

A good catalogue, of some sixty pages, of all the specialities of this firm and of the goods for which they are agents. Everything that the amateur wants is to be found here.

## Exhibitions.

### DARLINGTON.

On the 4th inst. the annual exhibition in connection with the above society was held and proved most successful. The prize and other photographs taken by the members were exhibited on stands in the centre of the hall. The four photographs by Mrs. Clark, of Louth, which took first prize in the open class, were much admired, as also the very interesting Japanese photographs lent by Mr. Henry Kitching and Mr. G. G. Hoskins. There was a large attendance of members and guests, including Mr. Howlett, the President of the Society; the Mayor and Mayoress (Alderman E. D. and Mrs. Walker), Mrs. J. Branstion White, Mr. Theodore Fry, M.P., and Miss Fry, Mr. and Mrs. James E. Backhouse, Mr. E. B. Mounsey, Rev. C. G. Davis, Mr. Ensor, Mr. James I'Anson, Mr. and Mrs. G. Newby Watson, Mr. and Mrs. S. W. Tomkins, Miss Farquhar, Mr. and Mrs. F. W. K. Stock, Mrs. Sinclair, Mr. P. W. Forster (Hon. Sec.), the Misses Forster (Elmbank), Mr. Snaith, Mr. T. Wood, Mrs. Sewell, Mr. and Mrs. Saunders, Rev. J. W. Pattison, and Mr. P. J. Cooper.

The following are the awards:—Members' Classes: Set of not

less than four and not more than six photographs (framed or unframed): 1st prize, the President; equal 2, Mr. James E. Backhouse and the Rev. C. G. Davis. Set of not less than four and not more than six photographs taken with a shutter: Prize, the Rev. J. W. Pattison. Set of not less than four and not more than six photographs by members who had never taken a prize at the Society's exhibition: Prize, the Rev. J. W. Pattison. Enlargement from quarter-plate to not less than 12in. by 18in. (negative or print to be shown with the enlargement): Prize, Mr. P. J. Cooper. Out-door portraiture (one or more portraits): Silver medal, Mr. J. Calvert. Set of six lantern slides taken from this year's negatives (copies of pictures excluded): 1st prize, the Rev. J. W. Pattison; 2nd, the Rev. C. G. Davis.

Open to all Amateurs:—Set of not less than four and not more than six photographs, framed or unframed: 1st prize, Mrs. Clark, Louth; 2nd, Mr. J. E. Backhouse, Hurworth. Set of six lantern slides taken from this year's negatives (copies of pictures excluded): Prize, Mrs. Clark.

During the evening lantern slides, executed by Mr. Sinclair, the Rev. J. W. Pattison, the Rev. C. G. Davis, Mr. Howlett, Mr. P. J. Cooper, Mr. J. E. Backhouse, Mrs. Clark (Louth), and Mr. G. Gale, and Mr. J. Evans (Wolverhampton), etc., were exhibited on the screen, Mr. J. Brownless's band discoursed sweet music in a most appreciative manner, refreshments were partaken of, and altogether a most enjoyable evening was spent.

### PRESTON CAMERA CLUB.

This society concluded its first year's operations by an exhibition held on March 1st and three following days. Upwards of 300 prints were exhibited by about fifteen members, the rest excusing themselves owing to the shortness of the notice and other causes.

The principal features of the show consisted of forty-four 12 by 10 prints sent by Mr. Wilding, of Egyptian scenery, and thirty-six 10 by 8, by Mr. Jackson, of architectural views in Rome. Mr. Macintosh contributed sixty half-plates of local and Scotch views, which were much appreciated, as were also a like number of quarter-plates sent in by Mr. Lewty.

The greatest number of the exhibits were on ordinary albumenised paper, but gelatino-chloride, both matt-surface and enamelled, seemed a great favourite.

Platinotype had only two exponents, Mr. Macintosh and Mr. P. P. Wilding, while bromide was represented by Mr. E. C. Grierison (enlargements), Mr. R. M. Worden, and Mr. J. Atherton. This gentleman contributed half a dozen 12 by 10 prints of local views taken thirty years ago, which excited general interest.

The Eastman Company, in addition to a number of Kodaks, exhibited several enlargements and a number of contact prints on their well-known paper. Waterlow and Sons and the Britannia Works Company were also represented by frames. Most of the best known makers had a large assortment of apparatus on view, and afforded the photographic public an opportunity of inspecting their goods, which was taken due advantage of by the numerous visitors.

Altogether the exhibition was voted a great success for a young society, and hopes are entertained that some of the medals so generously bestowed by the Editors of the photographic Press will, this season, find their way to Preston.

### KEIGHLEY.

On the 4th inst. the members and friends of the above association held a photographic conversazione. The rooms were beautifully decorated with flags, shields, and a collection of framed photographs, whilst the tables were plentifully supplied with albums, picture books, and provision by which the company could enjoy themselves by playing at chess, draughts, etc. During the evening Mr. Pollard exhibited, by aid of the lantern, a fine collection of slides illustrating some of the beautiful scenery and historical places to be found in Shakespeare's county; the exhibitor giving a description of the slides as they appeared made them all the more interesting to those who had not had the good fortune of visiting that part of the country. A fine collection of snap-shot slides by the same gentleman were also shown, to the gratification of the company present. Another collection of slides illustrated some of the views found in the west of Ireland, giving some idea of the mountainous scenery and poor cabins inhabited by the Irish peasantry. The evening was interspersed with recitations, songs, and instrumental music, which was highly appreciated and gave a lively tone to the things provided for the enjoyment of the company.



## Societies' Meetings.

**Ashton-under-Lyne.**—2nd inst. Dr. A. Hamilton (President) in the chair. Mr. T. Glazebrook, in the absence of Mr. G. R. Condelet, read a paper on "The Kallitype Process." Mr. Glazebrook showed a number of pictures, including failures and successes, and stated the process was well adapted to the printing in of clouds in landscape work, the specimens shown being very pretty. A discussion followed, and many members were of opinion the process was not permanent, several complaining of fading prints; in fact, this is borne out by sample pictures which are hung in the Society's rooms. The Secretary (Mr. G. H. Dean) showed the Thornton-Pickard Co.'s latest time and instantaneous shutter; also their new snap-shot shutter. The new members elected at last meeting are Mr. A. Ward, Mr. McGregor, Mr. Brown, Mr. Nield, Mr. J. E. Wilson.

**Bath.**—The third annual meeting took place on the 24th ult. Mr. Austin J. King presided. Mr. A. J. King was elected President, vice Mr. Pumphrey, resigned, and paid a high compliment to the latter in his speech. The Hon. Secretary then read the report and balance-sheet, which was adopted. Mr. P. Braham was elected Vice-President. The following gentlemen were elected the Committee: Mr. E. J. Appleby, Mr. A. F. Perren, Mr. G. F. Powell, Mr. W. Pumphrey (permanent member), Rev. E. A. Purvis, Canon Williams, and Mr. D. Williams. Mr. W. Middleton Ashman was re-elected Hon. Secretary and Treasurer. The Hon. Secretary announced the loan of two large albums of photographs by Frith, which Miss Ashley had kindly left with the Society for one month. He next distributed several sample packets of the Eastman Company's new rapid bromide paper and prospectuses, sent by Eastman Company, Marion and Co., London Stereoscopic Company, Mawson, and the Thornton Pickard Co. The latter also sent a time and instantaneous shutter, with speed indicator, and the new safety snap shot shutter, for exhibition; both shutters were briefly described by the Secretary. Exhibition notices from Chicago and Boston, U.S.A., were drawn attention to. Dr. Preston King read a short paper on the subject of "Rudge's Bio-phantoscope." The Bio-phantoscope is an adjunct to the ordinary magic lantern, by means of which the animal depicted on the screen can be made to move with life-like accuracy. In the machine shown there are a number of photographs on glass of a man's face, taken under different conditions. In one the face is at rest, in another it is smiling, in a third frowning; in others the tongue protruding, or the eyes alone that move, so throughout the whole series. It is by throwing the light of the lantern alternately through first one and then another of these various photographs, making each image fall upon the same portion of the screen as the preceding one, and without any intermediate loss of light, that the life-like movement of the portrait is obtained. The speaker then dealt with the mechanical details of construction, after which the utility of the instrument was practically demonstrated by Mr. Rudge, who invented it. In the discussion which followed, Mr. Braham pointed out that an instrument constructed to register as perfectly as this one was a very difficult mechanical achievement, the smallest deviation in the positions of the negatives would be painfully apparent when enlarged. He thought Mr. Rudge had made a distinct step in advance by photographing the subject with the same arrangement used for projection. The Rev. E. A. Purvis then made some further remarks on the behaviour of the new developer "Rodinal," and illustrated its suitability for developing bromide paper and transparent positives, but it should not be used again and again. Mr. E. J. Appleby also spoke as to the merits of "Rodinal" for the purposes indicated by the previous speaker, and showed further examples of work done by its means. The transparencies were shown by an oxy-hydrogen apparatus lent by Mr. Appleby. Votes of thanks to those who had contributed to the evening's entertainment brought the proceedings to a close.

**Blackburn.**—The first meeting of the Darwin branch of this society was held on March 1st. Major Baron, the President, occupied the chair. Mr. Timperley showed the "Illustrated Boston" lantern slides, and accompanied by a lecture which was read by the Rev. Henry Irving. After these slides had been shown, others by Messrs. Baron, Timperley, Gowans, and G. Butterworth were thrown on the screen. Mr. Cavis and Mr. Gowans (hon. sec.) explained the intentions of the society with regard to the new branch. Meetings are to be held every fortnight alternately at Darwin and Blackburn, and the summer excursions are arranged for Tuesdays, Thursdays, and Saturdays, so as to suit all members. During the evening, Mr. J. F. Holden and Mr. G. Butterworth gave musical selections.

**Blackheath.**—Ordinary meeting, 23rd ult. Mr. J. T. Field in the chair. Subject, "Enlarging." The Hon. Sec., after exhibiting and explaining apparatus for enlarging by daylight and artificial light with a condenser, proceeded to demonstrate a simple means of obtaining fair results (without a condenser) by burning several small pieces of magnesium ribbon behind a ground-glass blind. The new

means of enlarging the actual films by the "Cresco-fylma" process was also illustrated.

**Bristol.**—On 1st inst. Mr. Frank Holmes, an honorary member of the club, gave a demonstration on bromide enlarging. He commenced by saying that daylight was far superior than artificial light for enlarging, and he described apparatus which any amateur would have, and that could be easily used. For the demonstration Mr. Holmes used a good optical lantern, oil light, and the lens stopped down to about half its working power by an improved stop. The first exposure was a landscape, 25 sec. on Eastman's rapid bromide paper, and the second was a portrait, with which he illustrated vignetting. The development was with ferrous oxalate, and the enlargements were then cleared and fixed. Mr. Holmes concluded by toning with the uranium an enlargement be had with him.

**Brixton.**—An open lantern night was held on the 3rd inst., Dr. J. Reynolds in the chair. The proceedings opened with "A Tour in South Cornwall and the Scilly Isles," by Mr. J. Bartrop, illustrated by Messrs. H. and T. Bartrop and J. A. Butler. This was an account of a holiday trip last August taken by the above gentlemen to Falmouth, Penzance, the Lizard, Newlyn and the Land's End, some of the views of the latter being magnificent. Altogether some 150 slides were shown, and their all-round high quality was as good, if not superior, to any shown the Club before. A number of views of Switzerland were then shown by another of the members, Mr. F. Goldby, and were certainly quite up to the usual high-class work turned out by this member, and the fine mountain scenes certainly earned the applause they received. Other slides were also shown by Messrs. Bevins and Nye. The Club's own lantern outfit was manipulated with perfect success by Mr. T. J. Bartrop and the Secretary (Mr. F. W. Levett). The Assistant Secretary presented the accounts of the recent smoking concert, which showed a substantial profit towards the funds of the Club. Motions for the annual general meeting were brought forward, and several matters of private interest were discussed. The question box was opened, and a considerable discussion took place on "Is there any reason to suppose that a gelatino-chloride lantern plate should not be permanent?" The Chairman said that he had made a very great number of these plates, and had not found any case of fading. Messrs. Goldby, Butler, and Howard, who also spoke, seemed to favour this view. A question on "Uranium Toning" was left over until the attendance of the President, Mr. Dresser, who has made a special study of this process.

**Bolton.**—Ordinary meeting, 1st inst. A plate-developing competition had been projected, and the results were announced. Two of the most recent recruits tied for the first place. The winners were, 1st Prize: Mr. Collier, Dr. Barr; 2nd, Mr. Knowles. The negatives were all considered excellent.

**Bournemouth.**—At the meeting on the 2nd inst., Mr. P. H. Price read a paper on "Exposure." Having reviewed the different matters to be taken into consideration in calculating a correct exposure, such as focal length of the lens, actinic quality of the light, rapidity of the plate used, nature of the subject, and size of stop, he called attention to the use of exposure meters, strongly advocating the use of Watkins' meter, which he had found of great service in the varying conditions of outdoor photography, and still more so in the uncertain light of interiors. Mr. Price gave a full description of this apparatus, and showed several negatives taken with its aid. The paper was followed by a discussion.

**Camera Club.**—On 3rd inst. a complete demonstration of the treatment of prints by the carbon process was given by the Auto-type Company. Capt. Abney presided at the meeting. Mr. Sawyer, in an address, gave a description of the process, and Messrs. Burton and Braham went through the necessary manipulations with a number of prints which had been prepared for the demonstration. A large number of fine illustrations was on exhibition in the room.

**Chiswick.**—On 7th inst. a lecture on "The Hot Bath Platinotype Process" was given by Mr. R. W. Watson. The lecturer said that in his opinion, platinotype was unexcelled by any other printing process, from an artistic point of view. Photographs were exhibited which showed the adaptability of platinotype to any style of photograph. The lecturer dwelt particularly upon the necessity of keeping platinum paper perfectly dry, both before and after printing.

**Crews.**—A meeting was held on the 2nd inst. The Rev. Dr. Rainsford occupied the chair, and there was a fair attendance of members and friends. Mr. A. H. Hignett gave a very interesting lecture on the Highlands of Scotland, explaining the route from Glasgow, visiting most of the places of interest on the west coast of Scotland, including Oban, Isle of Skye, and other resorts, via the Caledonian Canal to Fort William, Ben Nevis, and then overland, passing through the beautiful scenery and valley of the River Tay, and via the Forth Bridge to Edinburgh. The lecture was instructive, not only from a photographic point of view, but to tourists, giving a grand idea of scenery to be met with. The lecture was illustrated by 150 excellent slides, mostly from negatives taken by the lecturer during visits to Scotland. The lantern was under the management of Mr. C. S. Scott.



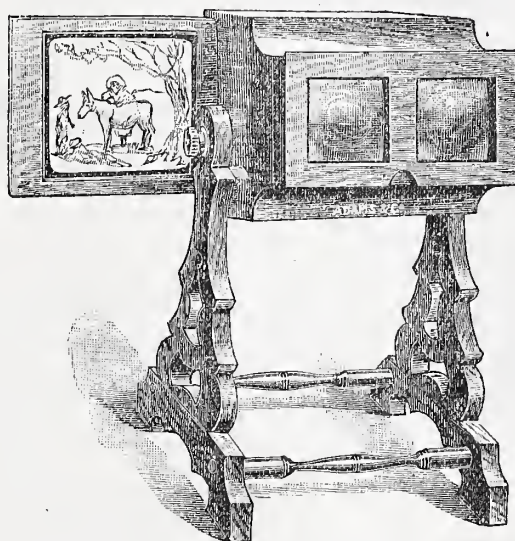
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**Croydon (Microscopic).**—Ordinary meeting 4th inst., Mr. E. Lovett in the chair. Mr. L. Sarjeant exhibited an improved hand-camera of his own construction. Mr. J. H. Drage then read a very interesting paper entitled "Pictorial Composition." Mr. Drage hoped that in reading this paper before the Club the members would accept it more in the light of hints, and would give them a knowledge of the various lights, cast shadows, introduction of figures and the general composition of the pictures, balance of parts, and treatment of lines. Trimming prints was a thing photographers should be especially careful of, the horizontal line being carefully noted, many pictures being spoilt by carelessness in this respect.

**Croydon (Camera Club).**—On the 29th of February, the President in the chair, Mr. Clarke described and showed the application of the Welshach gas-light to the optical lantern, the incandescence being produced by means of air forced through benzoline. The light, although not equal to lime light in power, is one which possesses several advantages; for instance, it is cheap, and is easily procurable in out-of-the-way districts, where coal gas and oxygen are unobtainable. A large number of slides were shown by the aforesaid light and also by the oxy-hydrogen. Mr. C. F. Oakley exhibited and explained a very taking hand-camera for plates  $3\frac{1}{2}$  in. square, "The Express." Its chief points are (1) price, viz., 25s.; (2) weight, which charged is only 20 oz.; and (3) compactness, its dimensions being  $5\frac{1}{2}$  by  $4\frac{1}{2}$  by  $3\frac{1}{2}$ . It is of magazine type, and carries six plates. The mechanism was tested by several members present without any "jamming," or other failure ensuing. Messrs. Holland and Neeves presented the Club with framed photographs of their production. A resolution to initiate a "Club portfolio" was adopted. Members are requested to bring one (or more) mounted prints to meeting on 14th. The best one will be selected for the portfolio. An extra meeting will be held on the 11th, when a demonstration will be given on "The Development of Prints on Eastman's Extra Rapid Paper." 14th, Mr. D. E. Goddard, "Silver Printing;" 17th, annual dinner, "Greyhound."

**Edinburgh.**—A meeting was held on 2nd inst., Mr. Hippolyte J. Blanc, President, in the chair. A paper was read by Mr. J. C. Oliphant on "Eastern Europe from a Photographic Point of View." Mr. Oliphant mentioned that photographing in Russia without permission, which was most difficult to obtain, was most dangerous. Detective cameras were of no use, the best to use being small hand-cameras. The Special Committee appointed to make an attempt to secure suitable premises for club rooms recommended that they acquire the premises in No. 38, Castle Street, at a cost of £920, and were unanimously of opinion that the premises were in every way adapted to the uses of the Society. By the acquisition of the premises, which would be open daily, additional inducements would be presented to beginners in the art. Mr. William Brown moved—"That the Society unanimously approve of the Council's report, and of the various recommendations contained therein, remit to the Council to take the necessary steps to purchase on behalf of the Society the premises in 38, Castle Street, and having the same put in order for occupation at the earliest possible date; further, instruct the Council to examine the existing laws and report to the Society at a special meeting to be held in April regarding any alterations which may be found necessary under the altered circumstances of the Society." Mr. C. Fraser seconded, and after considerable discussion the motion was unanimously agreed to.

**Glasgow.**—The third popular meeting of the session was held on the 25th ult., Mr. William Lang, jun., F.C.S., President, in the chair. The lecturer for the evening was Mr. A. Lindsay Miller, who showed a large series of transparencies to illustrate his subject, "A Chat about Modern Painters," which was treated in an instructive and interesting manner. Slides were shown from the works of Wilkie, Turner, Landseer, Millais, Tadema, Leighton, Meissonnier, Millet, etc., etc. A meeting of the session was also held on the 3rd inst. Three new members were elected, viz., G. C. Gilmour, John Alston, and Dr. A. W. Russell, M.A. Mr. John Annan read a paper on "The Position of Stereoscopic Photography in regard to Beauty and Utility." The paper was followed by an animated discussion. One of Dallmeyer's new tele-photographic lenses mounted in aluminium, and a new hand-camera, "The Flying Shot," with a novel folding arrangement, were shown. A series of transparencies on Rouch's Beechey collodio-bromide plates was passed through the Society's lantern.

**Great Yarmouth.**—On the 1st inst., the Hon. Sec. read a paper on "Hand-cameras." Invitations had been sent out to non-members resident in the neighbourhood, and there was a good attendance, the Mayor and Mayoress being among those present. The President, Mr. F. Danby Palmer, opened the meeting with a few remarks on photography generally, and then called on Mr. H. Harvey George for his paper. That gentleman went into the question of hand-cameras most thoroughly, and gave a complete explanation of the different points desirable, and also illustrated the use of the various instruments he had for exhibition, and which had been lent to him by the makers, among which were the following: Rouch's Eureka

camera, Ross's Portable Divided, the Griffin, the Facile, the Cytox, the Key, the Shuttle, the Radial camera, the Luzo, the Vanneck, the Swinden and Earp, Griffith's detective, the Talmer, the Optimus detective. Mr. H. Harvey George said that he had been promised the loan of the following cameras, but for some cause or other they had not arrived: the Beck hand-camera, Shew's Eclipse, the Artist's hand-camera. Only one firm had declined sending a sample of their work, but perhaps that was not much loss. The lecture then stated that the chief points desirable in a hand-camera are as follows: It should be light and unobtrusive and ready for use in as short a time as possible. The lens should be of first-rate quality and large enough to cover the plate perfectly, so as to admit as much light as possible when used for instantaneous work. The shutter should work at a very rapid speed, and yet be adjustable so as to give time exposures. The finder should be capable of giving a large and correct view of the picture to be taken; in fact, he was very strongly of opinion that a double camera was the only perfect instrument, although, no doubt, that class of camera known as the "reflector" type was capable of greater development, and would very nearly supply the requirements he had named. Various lantern slides, taken from hand-camera negatives, and lent by the makers, were thrown on the screen during the evening by Mr. A. Price and Mr. H. D. Arnott, and light refreshment was handed round at the conclusion of the lecture.

**Herefordshire.**—An ordinary meeting was held on the 1st inst. There was a good attendance of members, to see the "Charity Slides," comprising about 100 slides in six sets, and all were good slides in each set. Mr. W. E. Haines manipulated the society's lantern, Mr. A. C. Edwards, jun., reading the accounts of each as thrown upon the screen. Some members then showed their own slides, and the proceedings terminated.

**Leigh.**—The fortnightly meeting was held on the 3rd inst. The President, Mr. J. H. Stephen, presided. There was a fair attendance of members. Mr. W. Drabble gave an interesting paper on "The Lantern," afterwards passing slides of the members through his splendid limelight apparatus. Mr. R. Leigh's slides of Douglas, Isle of Man, Llandudno; and Mr. E. A. Williams' slides from hand-camera negatives deserve special mention.

**Lewes.**—A meeting was held on the 1st inst. Mr. J. G. Braden presided, and there were also present Councillor Wightman, Mr. E. J. Bedford, Mr. Reeves, Mr. Percy Morris, Mr. J. Tunks, Mr. E. A. Venn, Mr. Constable, etc. An interesting paper on "Kallitpe Printing" was read by Mr. Bedford, and one of the members exhibited prints on the Eastman paper distributed last month.

**Lewisham.**—On the 4th inst., Mr. Alf. H. Miles (Vice-President) in the chair, a large number of excellent slides, sent in by the members, were passed through the lantern, and showed a marked improvement all round since the last lantern night, proving that the papers and demonstrations had produced a practical effect. Mr. H. Bedford Lemere lent some slides of the Naval Exhibition, and Mr. Henderson, who has just returned from the Riviera, brought a large number of slides of that district.

**Liverpool Y.M.C.A.**—At the meeting held on Wednesday, the 2nd inst., the first part of a lecture on "Art and Nature" was delivered by Mr. John C. Lee, the Hon. Secretary. The lecturer traced the evolution of natural forms from the rude engravings on the relics of the ancient cave-men down to the introduction of statuesque figures in the earliest pagodas of India and China.

**North London.**—On the 1st inst., Mr. J. Traill Taylor in the chair, a circular was laid before the Society from the Royal Commission for Chicago Exhibition, and one from the Photographic Society of Great Britain enclosing the Affiliation Rules. Mr. James Martin then read a paper on "Platinotype Printing," dealing first with the chemical properties of platinum, and the reactions involved in the printing process, which he described as possessing all the advantages ever claimed for it—beauty of result, ease and simplicity of manipulation, and absolute permanence of prints; in fact, a "prince of processes." The details of the hot-bath process were then fully explained and illustrated by specimen prints in various stages, including some very beautifully finished pictures printed by the process. The needful points of care were discussed, the what and how to do, and the what not to do, receiving full attention, followed by a complete demonstration in which every step was shown in actual work. The cold bath and sepia processes were briefly spoken of, but did not form part of the demonstration. At the close a specimen print of some very beautiful ice crystals, presented by the lecturer to the Society, was passed round for examination.

**North Surrey.**—At the usual meeting Mr. Dalzell read an interesting paper on the subject of "Tele-photography." He said his attention had been drawn to the subject by the production at a previous meeting of some specimen prints taken by Dr. Miethe, of Berlin, with an ordinary aplanatic and a tele-photographic lens respectively from the same point of view. He arranged with Mr. Senior and the Hon. Secretary to carry out some experiments in



tele-photography. After repeated failures with a telescopic opera glass they had succeeded in producing a negative with one limb of an ordinary small opera-glass pressed close to the front objective of a R. R. lens. The resulting picture was an enlargement of two diameters as against an image formed by the R. R. lens alone. Subsequent experiments had led them to discard the use of a lens other than that of the opera-glass itself, and by extending the distance between the eyepiece of the opera-glass and front objective, and inserting that in the camera in lieu of the ordinary lens, they had succeeded in producing enormously enlarged negatives. Prints of a view taken of a house sixty yards away were handed round, showing a window about a quarter of an inch square. By means of the opera-glass extended as explained they had produced from the same standpoint a full quarter-plate picture of the window enlarged from a quarter of an inch to the full size of the plate. A general discussion on optics ensued. It was explained that the exposure given to the picture taken by the opera-glass was twice that of the ordinary R.R. lens, four and two seconds respectively, but both showed signs of over-exposure.

**Richmond.**—On the 4th inst., Mr. Cembrano presiding, some prize slides were shown, and greatly admired. Slides by Messrs. St. John Hunt, Nevill, and Ramsay were also passed through the lantern.

**Rochdale.**—The monthly meeting was held on the 29th ult., Mr. C. R. Beaumont in the chair. J. H. Crabtree Wardle was appointed on the committee in place of J. H. Hoyle, he having lately taken the post of Treasurer. After a discussion on general matters, the Secretaries (W. and S. Ingham) presented to the members present samples of the Eastman Company's new bromide paper which had been sent by the Company.

**Southsea.**—At the meeting on the 2nd inst., the rules of the Society were fully considered, and revised. The Society has been affiliated to the Photographic Society of Great Britain, and during the evening the affiliation scheme, and the rules connected therewith, were discussed. Mr. J. J. Thornton (Vice-President) and Major H. W. B. Bruno (Hon. Secretary) were elected delegates to represent the Society.

**Sydenham.**—On the 1st inst. a meeting was held, the President in the chair. Mr. Piggott gave an excellent demonstration on "Enlarging," using the ordinary lantern, and also a lantern constructed on the principle suggested by Mr. Dresser in his book on "Lantern-Slide Making." During the evening several exposures were made and developed with very good results. Mr. Piggott had evidently mastered the art of enlarging, and was able to go minutely into the details, giving some very valuable ideas for vignetting, developing, etc. Notwithstanding the inclement state of the weather there was a large gathering of the members.

**Wakefield.**—At the ordinary meeting of members held on the 29th ult., a paper was read by Mr. J. H. Chaplin on "Photographic Chemistry." Mr. Harold Briggs, of St. John's, occupied the chair. The paper embraced a brief sketch of the history of photography from the earliest times down to the present era. Special attention was directed to the difference between the chemistry of development of the collodion wet plate and the gelatine dry-plate. The probable alteration in the sensitive film through the action of light was also discussed, and the paper concluded with an explanation of the chemistry of silver and platinotype printing. At the conclusion a

discussion on several points of practical interest took place. Mr. Shaw and Mr. Woodcock were elected new members.

**West London.**—On the 4th inst., a pleasant informal gathering, when various photographic matters were discussed with an absence of ceremony, which was very acceptable to the majority of members present, and which enabled those gentlemen, who, though talented, suffered from an excess of modesty, to give the others present the benefit of their knowledge and experience; also those of the younger members who desired information on various matters to obtain it in the course of friendly conversation. It is hoped that any gentleman who has anything in the least interesting in a photographic way, will bring it down to these meetings and help to make them the success which the experience of the first evening seems to show will be achieved.

**West Surrey.**—A meeting was held on the 2nd inst., Mr. Davison in the chair. After the usual business had been transacted, Mr. Gale exhibited his most recent slides upon the screen. In the course of his remarks, Mr. Gale said that he had at last come to the conclusion that good transparencies could be made with a dry plate as with a wet collodion plate. He said that he did not readily take up with a new process, until it was fully established, and this, no doubt, was the reason he had stuck to lantern slide-making by the wet process until so recently. About 100 slides were shown upon the screen, and were fully appreciated by the large number of members present.

### SOCIETIES' FIXTURES.

March 10.—DEWSBURY.—"Lantern Slides," by Mr. S. Mitchell.

"10.—HACKNEY.—"Lenses," by Mr. P. Dando.

"10.—LONDON AND PROVINCIAL.—"Collodio-Bromide Emulsion," by A. Mackie.

"10.—CHESTER.—"Lantern Sliding Making."

"11.—RICHMOND.—"Toning with Platinum," by G. A. Ardaseer.

"11.—WEST LONDON.—"New Ilford Plate."

"11.—HOLBORN.—"The Latest Novelties," by E. J. Wall.

"12.—HOLBORN.—Annual Exhibition.

"14.—GRAPHIC.—"Picture-making in Plymouth Sound," by Miss Picken.

"14.—DARLINGTON.—"Exposure and Development," by T. Howlett.

"14.—HOLBORN.—Annual Dance.

"16.—COVENTRY AND MIDLAND.—"Printing," by W. T. Owen.

"17.—BRIXTON AND CLAPHAM.—Annual Meeting.

"17.—LEIGH.—"Cameras," by T. Haddock.

"18.—RICHMOND.—"Home Portraiture," by A. C. Hunter.

"18.—BRISTOL.—"Carbon Printing," by Mr. Holmes.

"18.—ISLE OF THANET.

"18.—WEST LONDON.—Technical Social Evening.

"18.—LEWISHAM.—"Photography with an Object," by A. H. Miles.

"18.—HOLBORN.—Monthly Competition Slides.

## To Correspondents.

Ali communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### QUERIES.

5506. **Silver Prints.**—Will any reader kindly inform me what is the cause of the whites in a print turning yellow after they have been toned and fixed? Several of mine have done this.—**SILVER PRINT.**

5507. **Sensitometer Number.**—The sensitometer number given for Ilford ordinary plates (30 times) is 18-19. I find in Vix's tables that sensitometer number 18 is for 10 times plates. Will some reader kindly explain?—**KROC.**

5508. **Centre of Negative Darker than Sides.**—I use Watson's hand-camera, quarter-plate. Frequently the centre of negative appears to be darker than the sides, as if that part were over-exposed. What is wrong?—**KROC.**

5509. **Griffith's Camera.**—Would some one kindly give me their experience of Griffith's lantern-slide making camera, and whether it is possible to make good slides with it by artificial light?—**N. M. II.**

5510. **How to make a Negative from Silver Print.**—I have a negative which has got destroyed. I have only one silver print taken from it. Could someone instruct me how to make a negative of the print? Could it be done in printing frame by contact printing?—**COUNTRY COLSIN.**

5511. **Underwood's Camera.**—Can any reader recommend Underwood's camera called "The Rectilinear Exhibition" 2-SNAPSHOTS.

5512. **Fixing.**—Will any amateur kindly tell me why my plates, after they are developed and put in the hypo, fade? I use 2 oz. of hypo to half a pint of water? Also can you tell me a good toning bath?—**FOX.**

5513. **Speed of Plates.**—Can any reader give me an idea of the speed of Thomas' instantaneous plates and Ilford ordinary, according to Messrs. Hurter and Driffield's actinograph number?—**F. E. ROOPE.**

### QUERIES UNANSWERED.

Feb. 19.—Nos. 5445.

"26.—Nos. 5473, 5474, 5476, 5478, 5481, 5482.

Mar. 4.—Nos. 5485, 5486, 5487, 5489, 5492, 5495, 5499, 5500, 5501, 5502, 5504, 5505.

### ANSWERS.

5458. **Correct Exposure.**—Give 1 sec. with  $f/22$ , and 8 sec. with  $f/45$ . I would prefer using  $f/32$ , in both cases, giving 2 sec. and 4 sec. exposure respectively. You should get Wornald's "Practical Index of Photographic Exposure," price 1s. 6d.—**T. DOWLING.**

5472. **Lantern Slide.**—You need no special apparatus. Procure a dozen lantern plates from any dealers (Ilford or Fry's are about the best), place your negative in printing-frame film side up, then lay a lantern plate on the negative film side down. Fasten the back of frame, and expose for two or three seconds about a foot away from an ordinary gas-burner. Develop in the usual way. If your slide is

intended for an oil lamp, be careful not to make it too dense. When the slide is dry, cover the film side with thin glass, and bind with strips, both of which are sold ready for use.—**ZEBRA.**

5472. **Lantern Slide.**—The simplest way would be to make lantern slides by contact. Place a lantern plate film to film with a negative, in the printing-frame, and expose it to a fish-tail burner for about 18 or 20 sec. for a negative of ordinary density, at a distance of one foot from the flame. Then develop and fix in the usual way. This is the best way for making slides from quarter-plate negatives—and the easiest.—**U. B. SMART.**

5484. **Keeping Pyro.**—With the precautions you mention it will keep indefinitely. It matters little whether you use it dry or in solution. You should try it both ways and satisfy yourself. A 10 per cent. solution may be made as follows:—Dissolve 4 oz. sulphate of soda in 10 oz. hot water, and when cold, add 1 oz. pyro and 20 gr. citric acid. My experience is that pyro and potash or soda does not allow as much latitude in exposure as pyro-ammonia, but I have found the soda better for instantaneous work.—**T. DOWLING.**

5484. **Keeping Pyro.**—Pyro will keep well if corked and tied down as you say. If you are accustomed to use ammonia, by all means use it; but personally I should use pyro and soda.—**CYANIN.**

5488. **Film Carriers.**—"G. E. T." should use the special carriers supplied by Stereoscopic Company for Carbutt's films, which are very cheap and light, and are made of thin metal with a rim hinged at one end, so that the film may be placed on the metal sheet and the rim laid over the edges of it. If the films are not cut true to size they do not bulge or get loose, but remain perfectly flat.—**P. G. H.**



**5490. Developers.**—This is for Ilford plates:—  
 Pyro . . . . . 1.85 gr.  
 Ammonia . . . . . 4.50 minims  
 Bromide solution . . . . . 2.50 " "  
 Fill up with 1 oz. of water.  
 For Paget plates:—  
 Pyro . . . . . 2.0 gr.  
 Sulphite . . . . . 7.29 " "  
 Ammonia . . . . . 2.0 minims  
 Bromide solution . . . . . 0.83 to 0.66 "

## —CYANIN.

**5491. Multiples.**—For these many receipts have been given in various mechanical and scientific journals. (1) Nelson's gelatine, 1 oz.; water, 2 fluid oz.; glycerine, 4 oz. (2) Glue (good pale), 1 part; water, 1 part; glycerine, 4 parts; whitening sufficient to give a cream colour. (3) Water, 4 oz.; sulphate of barium, 2½ oz.; sugar, 1 oz.; gelatine, 1 oz.; glycerine 6 oz. In all cases soak the glue or gelatine over night, then dissolve by heat in the water, and while still hot add the other ingredients, stir well and increase the heat until the whole is thoroughly mixed, then pour into a shallow tin to set. The vessel in which it is heated must have a water jacket, e.g., a glue pot or a jar in a saucepan of water; if necessary, a few drops of oil of cloves or carbolic acid may be added to preserve from mildew. For ink, try Judson's liquid violet dye, or mix aniline violet powder with glycerine, adding a little water if necessary. After use, wash off with a sponge and a little warm water.—**EXPERT.**

**5493. Reducer.**—The perchloride of iron reducer given on page 178, last week's number (586), will reduce your negatives and not cause any yellow stains. It will also, I should think, reduce your intensified negatives, but you did not state what these were intensified with.—**R. A. R. BENNETT.**

**5494. Dark-room.**—The best wood to use for developing table would be common deal twice coated with size, and then once with varnish. Earthenware sinks are undoubtedly the best. Apply to Doulton and Co., Lambeth, who will supply them or give the name of their nearest agent.—**EXPERT.**

**5496. Copying.**—Extend camera by inserting a tube of cardboard in the hole for the lens; or, better still, a larger tube in the hole left when the rising front is taken away. Fix the lens in a disc of cardboard or wood at the other end. You ought to use a wide-angle lens; possibly if you did so you would not want to extend the camera.—**R. A. R. BENNETT.**

**5496. Copying.**—Focus very sharp, use a small stop, take care not to over-expose, develop with sodium carbonate in preference to ammonia, and use Ilford rapid plate. The enlarging can be done by means of "Cresco-fylma." The proprietors of this solution will, however, enlarge to cabinet size for 1s. 1d.; post free, 1s. 4d., on receipt of negative.—**CYANIN.**

**5497. Glazing Bromides.**—The following is from Wall's "Dictionary," and said to be a useful and satisfactory collodion for enamelling prints:—

Pyroxyline . . . . . 6.5 gr.  
 Methylated alcohol . . . . . 3 oz.  
 " ether . . . . . 2 "

Pour the solution upon the surface, and by the evaporation of the solvents an attenuated film of pyroxyline is left absolutely transparent and structureless.—**CYANIN.**

**5497. Glazing Bromides.**—Simply equeegee them into contact with ferrotype plate or glass, and allow to dry. See letters in No. 383. They could be mounted without backing paper, unless you require them extremely glossy. I use a mountant composed of 4 oz. best glue soaked in water over-night, and in the morning the extra water strained off and the glue melted in a jam pot put into a saucepan of boiling water; when melted, stir in 4 oz. of methylated spirits, and pour into wide-mouthed bottles. Has to be liquefied by putting the bottle in hot water before use.—**R. A. R. BENNETT.**

**5498. Painting Slides.**—Mr. Stedman, of 174, Bridge Road, Battersea, gives lessons in this art.—**EXPERT.**

**5503. Mawson Plates.**—With f/8 on a fine day these plates are too rapid for cap exposures. You can, of course, overcome that difficulty by stopping down. The stop to be used is the one that will allow the use of the cap without under or over exposing the plate.—**CYANIN.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED. AM. PHOTO.**

**HALATION.**—We do not think that Gibon's opaque can be obtained in England. Why not try some English-made backing; for instance, Tylar's?

**J. WILSON.**—No lens working at f/6 will give as sharp definition over a large area as one working at f/8, but at the same time it might be useful to be able to use f/6 when required. The lens can be easily fitted on.

**J. SEDGWICK.**—Print safely received.

**G. A. STORY.**—We can trace no letter from you. Repeat the advertisement and letter, and we will insert free.

**D. H. ROXBOROUGH.**—Letter sent on by post.

**J. FALKNER.**—The crystalline salt is the correct one to use; the other, we think, is bisulphite of soda. We should advise you to use the eikonogen formula with acid sulphite for isochromatic plates. The acid fixing bath is made by adding 150 gr. of citric acid to 4 oz. of sodium sulphite in solution, then adding to 4 oz. of hypo in solution.

**A. H. WEBLINO.**—Print safely received; apologies for omission.

**J. THOMPSON.**—We will keep your letter before us and try to meet your views, but at present, we must confess, we hardly see how to.

**A. BEGINNER.**—You are only one, and the members of photographic societies run into hundreds if not thousands. They are all pleased to see the reports of their special society in our columns, therefore we are afraid the unit must give way to the hundred. We have often written to societies stating our willingness to reprint papers read before them, but if they will not accept our offer, we are powerless.

**W. R. POTTER.**—Under-exposure and the use of too much bromide and reducing agent is the cause of your white faces.

**REV. E. S. PAGE.**—Try Gotz, 19, Buckingham Street, Strand, W.C.; these are very good and efficient.

**A. E. G. PHILLIPS.**—The firm you name are, so far as we know, not lens makers; we could give no opinion without examining the same, which we will willingly do for you.

**MYSTERY.**—The stains are due to dirty dishes or dirty washer; probably some traces of pyro, or something similar, came in contact with them.

**P. D. BARNETT.**—Your prints are most fearfully stained, either from insufficient fixing and washing, or else dirty dishes. Otherwise they are up to standard.

**H. BARRACLOUGH.**—(1) Too much too light; the heavy shadow under the nose and chin wants lightening. (2) Very good. (3 and 4) Both good. Please not to send untuned prints for criticism.

**J. N. K.**—When you wrap two glass negatives in a piece of blotting paper and put them into an envelope and post them, please do not expect us to receive them whole; we literally poured your negatives out on to the table; there certainly was not a piece the size of a half crown.

**J. B.**—The lenses you name are not "in it" at all in any way, and there is no question about the depth; this is perfect.

**MICRO-PHOTO.**—Considering the materials you have been working with, your results are very good. Try Edwards' elow Isochromatic plates with the ferrous oxalate.

**J. G. F. (So. SHIELDS).**—For magazines, No. 3; for darkslides, No. 6.

**ALMA.**—The camera certainly will turn out good work, and the higher price should be paid.

**C. JONES.**—Dissolve 2 oz. sulphite of soda in 4 oz. of water, dissolve 4 oz. tartaric acid in 1 oz. of water, mix the two solutions; dissolve 6 oz. of hypo in 25 oz. of water, add to the hypo solution the acid sulphite solution, and you have the acid fixing bath.

**H. L.**—You are wrong in steeping the exposed paper in the washing water; this may quicken development by softening film, but certainly it is most likely to damage the tone. Are you sure the paper was the same rapidly? Did you use fresh developer each time, or the same over and over again. We should have said the washing water would have acted as a restrainer.

**MISS CANDY.**—All your prints are disqualified, as you sent us them to choose from; this certainly is not fair to the other competitors. If this were permitted, we should certainly take the medals ourselves, and not the competitors.

**S. P.**—We prefer the R.R.; the definition and flatness suffer from large aperture. The front of the lens is the best place.

**T. W. HUNTER.**—(1) No, more permanent prints are to be obtained by separate baths. (2) Try the Todd-Forrest lamp of Baird, Lothian Street, Edinburgh, for such a large hall you want one or two very powerful lamps. (4) To burnish the printing-out paper, you should well alum the print, wash dry, lubricate with alcoholic solution of castile soap, and do not have bar too hot. Why not squeegee down to plate glass or ebonite, etc.? (5) Silver prints should not be washed prior to using the combined toning and fixing bath.

**TRIX.**—(1) The cracking of albumen surface does not take place in the washing, but in the drying; it is caused by allowing them to curl with the albumen inside. The remedy is obvious—do not let them curl up. (2) Starch or rice paste are the best, and should be strained. (3) Let us have a letter stating what your difficulties with regard to lens are, and we will write you privately.

**C. B.**—(1) An inch too much foreground, over-exposed, over-toned, and camera was not upright. (2) Camera was not upright, over-exposed, and paper shifted in printing. (3) Not sharply focussed, or else paper shifted, over-exposed. (4) Good, but over-toned. (5) This is decidedly the best so far. (6) Bad, technically and artistically, over-exposed,

camera not upright, and no object of interest. (7) Over-printed and over-toned.

**BROMIDE.**—Make a solution of glue or gelatine, 20 gr. to every oz. of water; and whilst warm immerse print and glass in the same, bring into contact, lift carefully and equeegee, then dry and frame. The print certainly is up to competition, if not vignettied.

**INSTANTOGRAPH.**—(1) We prefer pyro and ammonia without sulphite for ordinary work, and eikonogen or Rodinal for instantaneous. (2) The formula is merely a plain solution of pyro in glycerine and spirit like Edwards's. Your prints would be up to standard if not on pink paper.

**P. D. BARNETT.**—(1 and 2) Probably the portrait lens affixed to the front would give you a larger disc and brighter picture. (3) Stick to the oil, gas is not suitable.

**I. F. L.**—You are using your hypo too strong and do not keep your solutions at the same temperature. Try again, and send us up a print rather less dense, if they occur again.

**E. A. P.**—The prints may be either portraiture, part landscape, part seascape.

**OMICRON.**—(1) If the pyroxylin is kept in a bottle in a cool place, there is no danger. (2) Yes, "60 times" means sixty times as rapid as a wet plate, but it is as good a simile as saying "as big as a lump of coal." (3) Send your requirements, price, and a list of cameras, and we will pick out what we think most likely to suit you. (4) Hume's Cantilever is one of the simplest. (5) Really, this is too bad of you. Give us some idea of what you want—magazine, film, dark slide, roll-holder, or what. It is hardly possible anyhow to say which is the best hand-camera, but there may be one which would fill your requirements best.

**H. E. W.**—(1) Get your prints well soaked with water, then place between blotting paper till only damp, lay the print face down on a sheet of glass, cover the back with freshly-made starch paste; treat half a dozen in this way, then begin working the paste on No. 1 into the paper with the brush, then lay on the mount, and cover with a piece of writing paper, and squeegee. (2) The album which is not absolutely essential. (3) We should prefer a better class camera.

**H.**—Bromide paper will keep almost indefinitely after exposure if protected from damp, light, and noxious vapours.

**B. B.**—We would suggest either Wray's R.R. of 8½ in. focus, Taylor, Taylor and Hobson 7 in., or Beck's 8½ in. All are good and reliable makers.

**J. S. T.**—The negative was considerably under-exposed. Coat the back of it on both sides with red matt varnish so as to make them print lighter. It would also be improved by clouds.

**W. HUGH.**—The prohibition extends to the whole forest. Your lantern slide is considerably over-exposed. What plates and developer are you using?

**VASCUS.**—W. Watson and Sons, 313, High Holborn. The Premier camera, with three double backs, price £12 5s., or Perken, Son and Rayment, 99, Station Garden, Optimum camera, with three double backs, at £8 15s.

## Sale and Exchange.

## RULES.

**CHARGE.**—Twelve words or less for Fourpence.

Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m.) and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.



**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Background.**—Background, 8 ft. by 6½ ft., new, fluted oils, interior, painted each side, price 17s. 6d., a bargain; photograph forwarded.—Hare, photographer, Sutton, Surrey.

**Cameras, etc.**—8½ by 6½ double extension camera, by Watson and Sons, four double and one single slide, solid leather case, all in first-rate condition, £9, cash.—J. M., care of Watson and Sons, 313, High Holborn.

**Cameras, Lenses, etc.**—5 by 4 square bellows camera, three slides, as new, 40s.; also Wray's 5 in. W.A.R., as new, 37s. 6d.—E. Ellis, 2, High Street, Wavertree, Liverpool.

For sale, Voightlander portrait lens and 5 by 4 mahogany camera, carrier, etc., very good condition, price £3 3s.—Address, Major, 3, Brunswick Road, Brighton.

Quarter-plate mahogany camera, two double dark slides, lens, tripod, 21s.; deposit.—J. Green, Sun Street, Walsall.

5 by 4 new hand-camera, Wray's R.R. lens, Shew's patent focussing flange, two finders, six Turnbull's double film slides, leather case, cost £8 10s., price £5; quarter-plate Instantograph, Ross landscape lens, 15s.—No. 254, office of this paper, 1, Creed Lane, E.C.

**Dark Slides.**—Three good half Instantographs, 6s. 9d. each; canvas camera case, leather fitted, new, 8s. 3d.; approval.—Adams, 90, Hatton Garden, E.C.—[Trade.]

**Hand-Cameras, etc.**—Kodak, for sale. Folding Kodak, No. 5, complete, with strong folding tripod to suit, also waterproof canvas cases, with straps, for both Kodak and tripod, all new and in first-class order, cost £16, will take £12.—Address, James Keith, C.E., 57, Holborn Viaduct, London, E.C., where articles can be seen.

Kodak No. 5 folding, 7 by 5, charged with film, cost £12 2s. 6d., with tripod, for £9 10s.—H. Orr, 57, Upper Sackville Street, Dublin.

Swinden and Earp's hand-camera, carries 20 quarter-plates, excellent condition, nearly new, price £5.—Arthur Weston, 7, Angell Road, Brixton, S.W.

Rouch's Eureka quarter-plate band-camera, as new, two counter-sunk finders, R.R. lens, speed regulator and shutter, new design, fixed, leather sling case, cost £9, sell £5 10s.—8, Alexandra Villas, Brighton.

Vanneck hand-camera, by Watson, very compact, will hold 12 plates 4½ by 3½, good R.R. lens, iris diaphragms, two view-finders, will focus instantaneous or time exposures, £8, cash.—Harvey Preen, Chartered Accountant, 15, Coleman Street, E.C.

Griffiths' hand-camera, size 5 by 4, with magazine for plates, price 37s.—Wratisslaw, Braunston, Rugby.

Kodak 2, with case, and unopened roll transparent film, 100 exposures (cost 17s. 6d.), one Eastman's glass-bottomed developing tray to take three negatives, two extra clamp in reels, one nickel spirit level on camera, 60 masks for printing, one glass shade for cutting prints (round); all the above perfect for £5; deposit.—No. 251, office of this paper, 1, Creed Lane, E.C.

Talbot and Eamer's Diamond (2), 12 quarter-plates, time and instantaneous shutter, two finders, good as new, 30s., or exchange for R.R. half-plate lens.—A. R. Clayton, 19, Church Street, Blackpool.

Facile detective, holds 12 plates, capital condition, cost 84s., price 75s.—Camera, 15, Stoke Road, Guildford.

**Lantern Slides.**—Splendid lantern slides of Scarborough and Filey, 5s. doz.—25, Stonegate, York.

**Lenses, etc.**—Dallmeyer's stereo landscape lens, 4½ in. focus, 25s.; half-plate best French R.R. lens, 20s.; Optimus 7 by 5 rapid landscape, 25s.; Ross No. 3 portable symmetrical lens, 5 in. focus, 50s.; whole-plate Wray's landscape, 40s.; pair Grubb's single stereo, cost £4, sell £2; 6 by 5 Dallmeyer's R.R., £4.—H. Parly, 99, Mansel Street, Swansea.

Lancaster's portrait lens, whole-plate, 2½ in. diameter, 50s., quite new, a bargain.—14b, stationer, Kimbolton, St. Neots.

Whole-plate lenses, Taylor's single landscape with iris, wide-angle doublet with rotating, rapid rectilinear doublet with Waterhouse, absolutely perfect condition; the lot, £5 10s.—A. H., office of this paper, 1, Creed Lane, E.C.

Ross' 8 by 5 rapid symmetrical lens with iris diaphragms, nearly new and guaranteed perfect, 90s., list price £6 7s. 6d.; also Diamond hand-camera, in case, perfect, 19s. 6d., cost 35s.—E. Jackson, 71, Oxford Street, Manchester.

Exchange half-plate portrait lens, for wide-angle lens or Griffiths lantern-slide camera.—Pollock, Telegraph, Belfast.

For sale, c. d. v. lens (very rapid), engraved I.S. 16,000, cash price, 12s. 6d.; also c. d. v. lens (Dubroni's patent), suitable for indoor portraiture, price 12s. 6d.—Pentney, 16, Out Risbygate, Bury St. Edmunds.

Disposal of outfit! Genuine bargain! I will sell my half-plate triple achromatic lens, by Dallmeyer, with rack and pinion, for £2, cost £5; warranted as good as new.—Apply, W., care of Liberal Club, Saffron Walden.

Dallmeyer's 8½ by 6½ patent R.R., £5 5s.; 1A W.A.R.

8½ by 6½ ditto, £4 4s.; both fit the same flange; also 8 by 5 Ross R.R., £4; all in new condition.—Stevens, 83, Balcombe Street, London, N.W.

Lancaster's quarter-plate instantaneous lens and shutter, iris diaphragms, new. What offers? Also camera stand.—S. Rimmington, 7, Lesseps Road, Liverpool.

**Negatives.**—Negatives for sale. Stereoscopic and quarter-plate, price 3s. 6d. and 1s. each respectively.—Hughes, 2, Trafalgar Terrace, Bray, Ireland.

**Roll-holder.**—Eastman's (last patent), for 7½ by 5 camera, cost £3 7s. 6d., will take £2 15s., with two extra clamping reels, same; on approval; deposit.—No. 250, office of this paper, 1, Creed Lane, E.C.

**Sets.**—Lancaster's best half-plate brass-bound camera, five slides, brass-bound, with Dallmeyer's 6 by 5 R.R. lens, double extension, best sliding tripod, and leather case, cost £15 15s., sell £10 15s.; best London long-extension whole-plate camera, double slide, whole-plate Wray's landscape lens, and stand, cost £11 15s., sell £7; best quality 15 by 12 London made double extension camera and double slide, cost £12, sell £7 10s.; Watson's 7½ by 5 Tourist camera, three slides, cost £7 5s., sell £3 10s.; Sands and Hunter's half-plate burnisher, cost 40s., sell 20s.—Parly, Mansel Street, Swansea.

Very superior and complete whole-plate outfit for £15, or in parts, as under.—A. H., office of this paper, 1, Creed Lane, E.C.

Whole-plate camera, long focus, by Bildcliffe, six double dark slides, perfect condition, as new, cost £14; solid waterproof canvas sling cases for above, complete, £9, or offers?—A. H., office of this paper, 1, Creed Lane, E.C.

A good half-plate long-extension camera, three double dark slides, all improvements, fitted with rapid ectilinear lens and fourfold tripod, hardly soiled, price £5 5s.—Good, 38, Rainbow Street, Camberwell, S.E.

Half-plate (Underwood's Instanto) extending bellows, rising and cross front, swing and reversing back, lens, iris diaphragm, shutter, two double slides, quarter carrier, tripod, and bag, thorough condition, 60s.—16, High Street, Newport, Mon.

For sale, complete photographic apparatus, consisting of a half-plate Lancaster camera and tripod, patent lens, with dilating diaphragm and instantaneous shutter, an "Amateur" dark-room lamp, seven printing frames, two dark slides, set of drachm scales, four negative boxes, six washing dishes, a Demon camera, and a quantity of mounts, chemicals, and photographic literature; price £7. May be seen at any time on application to H. G. P., 67, Downs Road, Clapton, N.E.

15 by 12 camera, Stereoscopic Company's best make, hardly used, very complete outfit, three double slides, iris lens, good pneumatic shutter, etc.—No. 245, office of this paper, 1, Creed Lane, E.C.

For sale, quarter-plate set £3; Optimus 5 by 4 R.R. lens, Thornton-Pickard time and instantaneous shutter, Lancaster's Instantograph, four-fold, oak legs, brass-mounted, six double dark slides (Tyler's); all in thorough working order; carriage paid one way.—E. D. Stoney, 54, Howard Street, Salford.

Lancaster's Instantograph set, quarter-plate, complete, in good order, two extra double slides, and three protectors, lowest 37s. 7d.; approval; deposit.—Kroeger, 73, St. Augustine's Road, Camden Town.

Underwood's half-plate Instanto set, good as new, only 61s. 6d.—H. Rowe, Wallbridge, Stroud, Glos.

Lancaster's International camera, half-plate, instantaneous lens, shutter, two double slides, carriers, tripod, extra front, rapid rectilinear lens (Houghton, Holborn), the whole a bargain, 5 guineas.—Siwell, 23, Spital Street, Brick Lane, London.

**Shutters, etc.**—For sale, Newman's ½-plate instantaneous shutter for R.R. lens, in perfect working order, with six diaphragms, cost £2, change necessitated by iris, will take 16s. 6d.—Apply, Vicar, care of Baynes and Co., 120, Cannon Street, E.C.

Whole-plate Kershaw shutter, with extra tubing, 7s. 6d.; whole-plate Guerry single flap, 12s. 6d.; whole-plate porcelain and paper mache trays, racks, and sundries.—A. H., office of this paper, 1, Creed Lane, E.C.

**Sundries.**—For sale, magic lantern, 5 in. condensors, three-wick lamp, perfect, 40s.—Hetherington, Newcastle-on-Tyne.

For sale, two paper cloud scenes, 3s. 6d. each; four paper conservatory scenes, all 7 ft. long, 4s. each.—Hetherington, Newcastle-on-Tyne.

Bicycle or tricycle camera carrier, 10s. cost 15s.; approval; deposit.—25, Stonegate, York.

Stereo camera, pair of rapid lenses, by Trench, six first-class double backs, Kershaw double shutter, etc., price only £2 15s.; also Taylor and Hobson's 5 in. focus detective lens, cost £3 17s. 6d., price 50s.; also No. 1 Kodak, latest pattern, cost 5 guineas, price 2 guineas.—Address, J. W. C., 118, Southampton Row, W.C.

For sale, strong, thoroughly well-made quarter-plate mahogany camera and three dark slides (maker unknown), no lens, 30s.; Marion's whole-plate washer, 10s.; Godstone print-washer, whole-plate, 5s. These things have hardly been used.—Miss Boyen Brown, Mayfield, Old Southgate, N.

What offers in exchange for first thirteen volumes AMATEUR PHOTOGRAPHER, with binding cases for

three volumes, all clean and in good condition?—Drummond, Barker's Lane, Sale, Manchester.

What offers for flash-lamp, with india-rubber tube and reflector? To be seen at the office of this paper.—Mac, 1, Creed Lane, E.C.

Three best half-plate double backs, spring snap fastenings, new, cost 18s. each, price for the three, 30s.—John A. Hodges, 40, Fairlawn Grove, Chiswick.

Theobald's 8s. 6d. Acme telescope, good as new, fixed lenses, sent free for 4s. 6d. postal order.—W. Hall, Flimstead, Dunstable.

Talbot and Eamer bag-changing hand-camera, quarter-plate, holds 12, wide-angle lens, view-finder, instantaneous and time shutter, cost 42s.; also extra view finder, cost 4s.; four printing frames, three porcelain dishes, and spirit level; take 30s. for all. Can be seen at the office of the AMATEUR PHOTOGRAPHER, or be sent on approval.—No. 253, office of this paper, 1, Creed Lane, E.C.

Underwood's quarter Instanto tripod, perfectly new, price 4s.—Heath, West View, Kendal.

AMATEUR PHOTOGRAPHER from beginning of 1891 to present time, quite clean, price 3s.—Naylor, Aston Hall, Derby.

Lancaster's quarter Instantograph, Watkins' exposure meter, all accessories, 60s.—Atkins, Riverside, Rickmansworth.

Eastman's film carriers, five whole-plate, for 4s. 6d., cost 8s. 9d.; six 7½ by 5 for 4s. 6d., cost 9s.; three half-plate carriers for 12 by 10 camera, 3s.; four half-plate carriers for 7½ by 5 camera, 2s. 6d.; two quarter-plate carriers for 7½ by 5 camera, 1s.—No. 252, office of this paper, 1, Creed Lane, E.C.

Lantern slides, twelve plain, nine coloured, and comic sliding (new), also Lancaster's half-plate tripod and double back, cheap. Wanted (buy or part exchange), rigid tripod.—Call, 3, Edmund Place, Aldersgate Street, E.C.

Solo violin for disposal; beautiful, rich, and powerful tone; suit professional or any player; cash wanted; baize-lined case and silver-mounted bow; only 15s. 6d.; no rubbish, and very valuable bargain; 20s. worth of music (unsold) given in free; approval.—Mrs. Graham, College Buildings, Ipswich.

Changing bag, quarter-plate, 4s.; Decoudun's photometer, 4s.—A., 1, Seymour Place, Fulham Road.

First-class half-plate camera, three backs, every improvement, can be used for stereo work, £5, cost £6 10s.; waterproof bag for same, 10s.; Chapman's British three-fold tripod, 12s. 6d.; Kershaw Instanto shutter, 2½ in., 10s.; all guaranteed perfect and nearly new.—5, Milton Grove, Stockport.

## WANTED.

**Cameras, Lenses, etc.**—Required, well-made long-extension whole-plate camera (no lens).—Miss Boyen Brown, Mayfield, Southgate.

**Lenses, etc.**—Beck's, or other first-class half-plate rectilinear lens, 5 in. or 5½ in. focus, iris or rotating stops, good condition, must pass maker.—W. Whyman, 178, St. Paul's Road, West Smithwick.

Lens (with or without apparatus), half-plate Eury-scope or R.R.; particulars and cash price.—Bale, Sibsey, Boston.

Wanted, half or 7½ by 5, Ross preferred, three double slides, solid leather case, legs, will give £6.—Atkins, Riverside, Rickmansworth.

Wanted, quarter wide-angle rectilinear lens.—Heath, West View, Kendal.

Half-plate wide-angle rectilinear; also Watkins' exposure meter; cheap; on approval.—Jackson, 12, Oldham Road, Fallowfield, Manchester.

**Roll-holder.**—Wanted, Eastman's quarter-plate roll-holder, cheap.—W. G. Perks, Cleveland, Walthamstow.

**Sets.**—Wanted, Lancaster's half-plate International set, good condition; exchange Underwood's half-plate set, nearly new, good single lens, rack adjustment, two double dark slides, and pay cash, if needed.—F. Bailey, St. John's Lane, Canterbury.

Wanted, half-plate set with rectilinear lens; will exchange new Rational bicycle, 52 inch, or sell.—John Lowdon, 37, Maryland Road, New Town, Stratford, Essex.

**LENSES** adapted to larger flanges, 1s. 9d., post free.—Hiljessan, 37, Mount Park Crescent, Ealing. [Trade.]

**GREAT NOVELTY.** The "Book" Camera, quarter-plate, weighs 1lb. Patent applied for. Our 42s. double extension Camera is a marvel of cheapness, with rack and pinion and all movements. Illustrated catalogue free.—BRAINE & SONS, 22, Bedford Terrace Moray Road, Holloway, N.

## THE HAND-CAMERA FOR 1892.

**BEYER'S** Magazine Hand-Cameras, rapid lens, with fixed aperture, all in focus beyond 12 ft. Carry twelve plates, changed in one second; nothing to get out of order. Price, 25s. lantern size; 30s. quarter-plate. For particulars send stamped envelope to W. BEYER, 5, Kelly Street, London, N.W.



# The AMATEUR PHOTOGRAPHER

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FRIDAY, MARCH 18, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

*The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.*

**LEADER.**—Notes on Enlarging.

**LETTERS TO THE EDITOR.**—Platinum Toning Chloride Prints (T. H. Powell)—Society for Eastbourne (E. Burnham)—An Explanation Wanted (H. Harbour)—Actinograph (W. A. W. and W. L. Noverre)—Societies' Reports (An Old Subscriber, a Secretary)—Non-Vibrating Luggage Carrier (J. D. Pearson)—Photographic Convention (F. P. Cembrano, Jun.)—Hymn Slides (J. A. Watson)—Aluminium (H. Taunton-Collins)—Camera Club Conference (G. Davison).

**ARTICLES.**—Photographic Procedure (Wall)—Elementary Photography (Hodges)—Study and Practice of Art (Horsley Hinton)—The Lantern, and How to Use It (C. G. Norton)—How to Prevent Accidents at Lantern Exhibitions (Expert)—Improvements in the Tele-Photographic Lens (T. R. Dallmeyer).

**EXHIBITIONS.**—Wakefield—The Fry Manufacturing Company.

**APPARATUS.**—Ilford Isochromatic Plates—Fallowfield's Miall Camera—Jacoby's Collodion Paper (Scholzig).

**SOCIETIES' MEETINGS.**—Camera Club—Derby—Dewsbury—Dundee—Durham—Fairfield—Glasgow High School—Frome—Huddersfield—Jersey—Liverpool—Louth and District—Midland—Newport—Paisley—Richmond—Selby—S. London—Stockton—Tooting—Tunbridge Wells—W. London.

**OUR VIEWS.**—Camera Club Conference—High Tides at Bognor—English Exhibition at Brussels—New Society for Lincoln—Ice Crystals—New Society for Accrington—A Correction—Postal Club.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All Communications should reach the Editor by Tuesday.)

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE and EXCHANGE Advertisements, or other business matter for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers HAZELL, WATSON, and VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON E.C. (SALE and EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.)

**"Amateur Photographer" Monthly Competition No. 34.**—"PORTRAITURE AND FIGURE STUDY." Latest day, March 21st. —Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, April 15th.)

**"Amateur Photographer" Ladies' Third Competition.**—"LANDSCAPE OR SEASCAPE—LANDSCAPE WITH FIGURE—PORTRAITURE OR FIGURE STUDY." Latest day, March 31st. Prizes: Gold, Silver, and Bronze Medals, and Certificate. Not more than eight nor less than six mounted prints to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C.

We publish in our correspondence columns a letter from Mr. Geo. Davison, on the subject of the Camera Club Conference. The programme which we published on p. 178, March 4th, is sufficiently full of interest to photographers generally, that we hope our readers will strain a point to prove to the Council of the Camera Club how much they appreciate the efforts being made for the advancement of the science. The first afternoon programme is exceptionally rich in what are sure to be interesting papers, e.g. "Development," by C. H. Bothamley. Even old hands are always willing to hear something on this point, and beginners certainly can never hear too much. Mr. Warnerke, on "Chemigraphic Etching," will tell us some points on a subject about which little is known, we are sorry to say, and the paper should be pregnant with hints. Few of us, unfortunately, are able to despise the medicine man, and if he intends to call in the aid of photography to help to cure us and our ills, we may look more kindly upon him and his compounds, which sometimes rival our dark-room messes in nastiness, and Mr. Pringle will give us the latest advancements.

Mr. Willis is to give one of his practical papers on "Platinotype," and as so many workers are now using this process for preparing their prints, each and all should make an effort to hear him. In the evening, Mr. Van der Weyde is to speak on "Electric Lighting," and certainly no more competent man could be found, and Mr. Willis is to demonstrate the use of his new oxy-magnesium lamp, and Mr. H. E. Armstrong is to wind up with a paper on a very debatable subject, "The Theory of Development." On Wednesday, Art is the prevailing topic, and with such exponents as Messrs. H. Blackburn, H. Stannus, and H. P. Robinson, we are certain of hearing something good. Captain Abney, the President, will tell us something more than we now know about "Celluloid Films." With such inducements as these, we certainly hope to see not only a full attendance, but also to hear some interesting discussion, and if our readers will follow our example, they will crowd the theatre of the Society of Arts to repletion.

To those of our readers who can spare a day or two for a trip to the seaside, at the end of this month, it may be interesting to note that if the wind is in the S.W. quarter on the 28th, 29th, and 30th inst., exceptionally high tides are expected at Bognor. A dark room is available there, as announced in our advertisement columns.

There will be an interesting exhibition of English photographic art held at Brussels, and we extract the



following from a notice sent us. The principal idea of the promoters of this exhibition is to prove to the public of that country that photography has a right to be considered as an art, just as much as any other means of artistic expression. At the same time it has been considered that this exhibition ought to be a better means to stimulate and guide the efforts of amateurs in Belgium. It is hoped that the King of the Belgians will open the exhibition on the 25th inst. Such names as Abney, Burchett, Byrne, Gambier Bolton, Crooke, Clark, Calland, Davison, Diston, Dresser, Horsley Hinton, Keene, Lambert, Maskell, H. P. and R. W. Robinson, Sawyer, Slingsby, Sutchffe, Terras, Van der Weyde, Walery, West, and Winter ought to guarantee a good show.

A preliminary meeting has been held in Lincoln, for the purpose of forming a photographic society for that city, and Mr. Lilley, of Riseholme Road, Lincoln, will be glad to hear from any of our readers desirous of joining.

We have received from Messrs. J. Martin and Co., Park Villas, New Southgate, London, N., a print of some magnificent ice crystals. The peculiar and exquisite branch-like forms are the finest we have ever seen. Messrs. Martin and Co. are prepared to loan a lantern slide of these ice crystals to any society who will apply for the same, stating that their authority for so doing is this statement in the AMATEUR PHOTOGRAPHER. We had the pleasure of seeing one of these slides thrown on the screen at a recent meeting of the London and Provincial Association, and it elicited unqualified applause.

On Monday evening a meeting was held at the Victoria Restaurant, to take into consideration the advisability of forming a photographic society for Accrington. The attendance was very satisfactory, and after a pleasant discussion, during which a valuable collection of hand-camera photographs were exhibited, it was decided to form a society, under the title of "The Accrington and District Camera Club," with a subscription of 5s. per annum. The meeting was then adjourned until the 21st inst., when the officers for the ensuing year will be elected. In the meantime Mr. Isaac Hanson, Rothwell Height, has been appointed Secretary *pro tem*.

In the description of the duplex finder and duplex level, page 200 in our last issue, the letters C F and E should be respectively B E and C.

One vacancy occurs in a Postal Photographic Club. Any lady or gentleman desirous of joining will please forward a specimen print, which will be returned with rules, to H. Eyre, Crowborough, Sussex. A half-plate worker preferred.

**Photography in Scientific Research.**—On the 10th inst. Mr. C. V. Boys, F.R.S., delivered a lecture in the Church Institute, under the auspices of the Bradford Philosophical Society, on "Photography as a Weapon of Scientific Research." Mr. Boys explained how the brilliance and short duration of an electric spark make it possible to photograph objects travelling at an enormous speed, and described improved apparatus which he has invented for taking the utmost advantage of this fact in photographing flying bullets. By means of a lantern some very interesting photographs were thrown upon a screen, showing bullets in flight at various speeds, with the corresponding disturbances of the air, exactly what occurs when a bullet comes into contact with an object, and other phenomena of a similar kind, which can only be analysed by the combined use of electricity and photography. He contended that this new weapon of scientific research was of a most powerful order, and capable of resolving problems hitherto considered insoluble. There was a fairly large audience. Dr. Willis occupied the chair.

## LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.

At the request of some of the members, Mr. W. E. Debenham gave a demonstration of the "Wet Collodion Process." The method of cleaning glass was gone into, and it was mentioned that a most efficient polisher is a cloth not absolutely dry. The bath he had found to be made with the greatest certainty in the following manner: Nitrate of silver was dissolved in about one-third the quantity of distilled water that would be required to make it up to 30 grains to the ounce, a solution of caustic potash was added drop by drop, until there was a slight brownish precipitate which did not dissolve on shaking, iodide of potassium was then added in the same way, and the solution was then made up with water requisite to bring it to a strength of 30 grains of silver to the ounce of bath solution. It was then put aside until required, as in the alkaline state it seemed to rid itself of any impurity. When wanted it was filtered and nitric acid added, one minim for each 20 ounces of bath.

The collodion was prepared by dissolving 100 grains of pyroxiline in 5 ounces alcohol, and 10 ounces ether. This must stand for a day or longer to settle, and then to every 3 ounces of the clear collodion, poured off without disturbing the sediment, 1 ounce of either of the following iodisers was added:—

### PLAIN POTASSIUM IODISER.

|                  |     |     |     |     |             |
|------------------|-----|-----|-----|-----|-------------|
| Potassium iodide | ... | ... | ... | ... | 100 grains. |
| Alcohol, 820°    | ... | ... | ... | ... | 5 ounce.    |

### BROMO IODISER.

|                  |     |     |     |     |            |
|------------------|-----|-----|-----|-----|------------|
| Cadmium iodide   | ... | ... | ... | ... | 50 grains. |
| Ammonium iodide  | ... | ... | ... | ... | 50 "       |
| Ammonium bromide | ... | ... | ... | ... | 10 "       |
| Alcohol 820°     | ... | ... | ... | ... | 5 ounces.  |

Collodion iodised by the potassium iodiser soon lost rapidly, but bromo-iodised collodion might be kept for months, and was what had been almost exclusively used during the later years of collodion portraiture.

Either collodion might be developed with a solution of sulphate of iron, 15 grains; glacial acetic acid, 10 minims to the ounce of water. The plain iodised collodion was more generally developed with pyro, one grain of which to the ounce being substituted for the 15 grains of sulphate of iron.

Negatives were made from a transparency and developed in the presence of members, illustrating the simplicity of the process and a method of ascertaining the strength of the silver bath by means of a standard salt solution was also demonstrated.

Mr. A. Haddon (the Chairman), in thanking Mr. Debenham on behalf of the members for the very instructive demonstration, alluded to the extreme simplicity of the process, and the valuable formula that had been given to the members.

A discussion followed, in which Mr. A. L. Henderson and Mr. A. Cowan took part.

**Preston.**—The annual meeting was held on the 10th inst., the President, Colonel Oliver, in the chair. The Treasurer's report was considered very satisfactory, showing a balance of £4 0s. 10d. on the first year's working. It was decided to admit non-photographers as "social" members at half the usual subscription. Eighteen new members were enrolled.

**Mr. Gambier Bolton, F.R.G.S.,** had the honour of attending at Windsor Castle on Wednesday last, and presenting to the Queen five framed photographs of dogs in the Royal kennels, the Egyptian ass presented by General Lord Wolseley, and the celebrated champion short-horn bull, "New Year's Gift," recently sold from the Shaw Farm, Windsor Home Park, for one thousand guineas. We hear that duplicate copies of these will be hung in the Camera Club Members' Exhibition during the Conference.

**Photographers' Benevolent Association.**—The annual general meeting of this association was held at the rooms of the Photographic Society of Great Britain, 50, Great Russell Street, Bloomsbury, W.C., on Friday evening, the 26th February last, Mr. J. Traill Taylor, President, in the chair. The minutes of the last annual general meeting having been read and confirmed, the Treasurer, Mr. John Spiller, submitted the report and balance sheet for the past year, which showed that the association had been the means of helping many necessitous cases, and the report and balance-sheet were adopted. The election of officers was then proceeded with, the following being elected:—President, Mr. J. Traill Taylor; Treasurer, Mr. John Spiller, F.I.C., F.C.S.; Auditors, Messrs. Clifton, Farrington, Martin, and Sharpe; Committee, Messrs. Atkinson, Bedford, Berry, Freshwater, Drage, Harris, Hepworth, Hume, Hindley, Mackie, Parfitt, Rolph, Snowden Ward, and Tabrum. A general discussion followed, and the meeting concluded with votes of thanks to the officers of the association for their past services, and to the Photographic Society of Great Britain for the use of their rooms.



## NOTES ON ENLARGING.—III.

## THE LENS.

WHAT is the best lens for enlarging? is a question we often see asked. Well, the answer is very easy—viz., that lens which took the negative. But this answer requires a little modification. If the negative to be enlarged is a portrait, then a portrait lens may be used; but the back lens of the combination must be placed next to the negative. The most useful lens is undoubtedly the doublet of the rapid rectilinear type, as it gives, as a rule, excellent marginal definition. A single or landscape lens may also be used, but from the necessity of using a smaller diaphragm it is obviously slow; in this case the convex side must be presented to the negative, the plane or concave surface being towards the sensitive surface. The diaphragm should be about the diameter of the lens in front of the concave surface; that is, between the lens and sensitive paper. There is, of course, some residuum of distortion which may prove troublesome when enlarging architectural subjects. In the case of the rectilinear doublets, it is immaterial which lens of the combination is presented to the negative.

## APPARATUS FOR ENLARGING BY ARTIFICIAL LIGHT.

To most amateurs, especially those engaged in business during the hours of daylight, artificial light is the only one they can employ for enlarging; hence considerable attention will be paid to this.

We, first of all, as already suggested, divide our lights into petroleum, or mineral oil, gas, enriched gas, limelight, magnesium, and the electric light; and we shall endeavour to describe the arrangements for all, but must premise that the first essentials for successful work are that the light, no matter what kind it is, must be, first, small in dimensions, and, secondly, actinic in quality; the first gives greater sharpness, the latter short exposures.

*Mineral Oil Lamps.*—Opinions differ as to the best form of lamp for enlarging most, if not all, commercial apparatus being provided with lamps having flat wicks turned endwise to the condensers. Here again we find a divergence of opinion, some preferring two-wick, some three-wick, others four-wick lamps; generally, however, three-wick lamps are used. We have used, with good results, however, a round wick lamp, or so-called Argand burner, this being actually a Defries lamp of forty-candle power. The burner of this lamp is circular, with an air passage up the centre, and has a chimney of glass contracted just above the burner, and above the contraction, the flame appears intensely luminous and solid; it is at this point that the flame should be used. For this purpose it is necessary to provide the lamp with an outer case of brass or tin, which may be fitted in position and slid up and down, without in any way touching the glass chimney. The tinned sheet-iron is carried up above the glass chimney for some distance so as to lengthen the chimney, thus creating more draught, therefore more perfect combustion of the oil and a more actinic light. The outer sheet-iron case is provided with an aperture, circular, of half an inch diameter; and on looking into this, nothing but an intensely luminous circle of white flame is seen. No matter what lamp is used, the circle of illumination thrown by the objective should show no lines of variable illumination. The most important thing in all illumination is to have the radiant a point, otherwise we are troubled with parallax, varying illumination, and want of sharpness; but provided the degree of amplification be not too great, this trouble will not arise.

*Gas and Enriched Gases.*—Ordinary gas, unless of good quality, is not so suitable as gas enriched by the vapour of some hydro-carbon. The commercial form of albo-carbon will be found very suitable. Mr. Traill Taylor has suggested a

very convenient arrangement "which consists of two fish-tail burners, separated from each other by the extent of an inch, both flames having their flat sides towards the condensers, there being an opaque disc, with a circular aperture in it of a little over half an inch in diameter, placed as close as possible up against the foremost flame so as to reduce its effective area. The position of this aperture must be such as to be opposite to the most luminous part of the flame. The second flame behind the anterior one serves to confer intensity, and is of great utility; but nothing seems to be gained by a third burner. The gas flame, when thus enriched by the vapours of the albo-carbon becomes very intense. An Argand flame from gas thus enriched ought to yield a light of great excellence, provided it has a smaller flame ascending through its centre, and that provision is made to condense it by diminishing its diameter, either by a brass solar cap to cause a strong current of air to impinge upon the flame a little above the burner, or by a contraction in the glass chimney. Whiteness and intensity in such a case are increased by a judicious lengthening of the chimney to increase the draught. The area of the flame must, however, be reduced by the expedient already pointed out."

The Welsbach or Incandescent gas burner is one particularly adapted for enlarging, as the light emitted is exceptionally rich in actinic rays and the exposure thereby considerably shortened. In some experiments in connection with this light, we found that with the ordinary household gas supply the exposure was cut down to one quarter of that with an ordinary three-wick lamp.

*Limelight.*—This is, of course, one of the most convenient of all sources of light, and is so well known as to need but little description.

*Magnesium.*—So far as we know, there is no commercial apparatus for utilising magnesium as an illuminant with condensers, though of course it would be quite possible to utilise any ordinary enlarging lantern with a clockwork arrangement for feeding the magnesium to a small spirit flame, so as to keep the radiant point at one particular distance from the condensers.

*The Electric Light.*—Few amateurs or even professionals can afford the necessary outlay for this light, the cost of even a primary battery or accumulators, being considerable. In many parts of London, however, the wires for electric lighting are now laid along the principal thoroughfares, and it would therefore be easy to connect, and the expense of installation is about thirty shillings per lamp. A portable battery, the Schancheff, has been used for lantern work, and would also answer well for enlarging.

*Judging* by the enthusiastic manner in which Mr. W. Booth's paper on "The Progress of the Photographic Survey of Glamorgan-shire" was received at the last meeting of the Cardiff Photographic Society, it may safely be assumed that local photographers are determined to eventually make the survey one of the most complete in the kingdom. The object of the survey—viz., to assist Mr. Ballinger in forming a collection of photographs of old and new Glamorgan—is an exceedingly meritorious one, and we are glad to learn that the matter has been taken up with so much vigour. Soon after the question was mooted, about one hundred prints from old negatives in the possession of the members of the Society were placed in the library. This was only a small beginning, but the committee of the free library soon after thought it prudent to interest themselves in the matter, and magnanimously offered a series of medals for the best selection of photographs of the class indicated. Photographers then commenced to work with a will, and as a result some really excellent collections were exhibited at the Queen Street Hall in August last. As will be remembered, Mr. Mansel Franken was awarded the gold medal for a really superb collection, his work being pronounced by all as fully deserving of the medal and the encomiums passed upon it by the judges. Mr. Franken has now presented about one hundred and twenty prints to the library, which together with the contributions of the members of the Society will make about a thousand specimens which Mr. Ballinger has up to the present in his possession.



## Letters to the Editor.

### PLATINUM TONING CHLORIDE PRINTS.

SIR,—May I be allowed to supplement Mr. James Browne's interesting paper on "Platinum Toning as applied to Gelatino-chloride Printing-out Paper"? I have made but few experiments on the exact lines he has followed, and as he does not definitely state if the gradations of colour may be easily watched in the platinum bath, I am unable to say if my suggestion is an improvement or otherwise. Bearing in mind his remark that the "warmth of tone which is the characteristic of the process evidently has for its foundation the yellowish-red of the silver image associated with platinum in a greater or less degree," the question arises, is this foundation the best? Is it not possible to substitute a better?

One of the chief recommendations of gelatino-chloride paper is the ease with which gold takes the place of its silver; if not completely, yet to such an extent as to render prints far more permanent than on ordinary albumenised paper. The beauty of these prints is scarcely to be surpassed; if, therefore, we can substitute for the "yellowish-red silver image" the richer purple or purplish-brown of gold, and associate this with platinum, we should obtain still finer and more permanent results. Fortunately, platinum has more affinity for gold than silver. Bearing in mind these facts, I adopted the following modification of Mr. Browne's process. After washing the prints thoroughly, as he recommends, placing them in a salt bath, again washing and finally rubbing their surfaces with a pad of cotton wool, I toned them in a gold and borax toning bath, rendered slightly alkaline with carbonate of soda; I then placed them directly in the platinum bath Mr. Browne recommends, and found that toning took place very quickly, and yielded very fine prints. I found, as he did, that it is necessary to stop the toning, as it continues after the prints are placed in water, indeed, after only a short immersion, just long enough to slightly alter the colour; the prints become darker and darker when in water, till, ultimately, quite a blue-black.

As a guide for printing, silver prints will be found to lose most in the hypo bath, gold less, and platinum least of all; over-printing is therefore necessary in the first case, slight over-printing in the second, and very slight over-printing in the third.

Theoretically this process should be more permanent than any other; nothing can surpass the beauty and delicacy of the results.—Yours, etc.,

T. H. POWELL.

116, Denmark Hill, London, S.E.

March 9th, 1892.

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### SOCIETY FOR EASTBOURNE.

SIR,—A meeting was held on the 9th inst. to consider the advisability of forming a photographic society for Eastbourne. The Rev. W. G. Whittham presided, and was supported by several well-known amateurs.

Mr. E. Burnham was elected Secretary *pro tem*, and stated that he had received over thirty names of gentlemen wishing to join.

It was unanimously resolved that a society should be at once formed, and a sub-committee was appointed to make the necessary arrangements with regard to rules, subscriptions, etc., etc., and the meeting was adjourned until March 23rd, at 8.30 p.m., at Mr. Kirtlam's office, 82, Terminus Road.

All those interested in photography, who are willing to join this society can have full particulars by applying to

60, Terminus Road,

Eastbourne.

E. BURNHAM (Hon. Sec.)

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### AN EXPLANATION WANTED.

SIR,—In the reports of the meetings of the Blackheath and Hackney societies, published in your issue dated December 18th, 1891, a Mr. W. H. Smith is said to have developed prints taken on a new paper which the Platinotype Company were about to bring out.

A few days ago I called at the premises of the Platinotype Company, 29, Southampton Row, High Holborn, and asked if the new paper was ready. I was informed that the company knew nothing of the demonstrations that had been given, and had no intention of producing a new paper. I was further informed that many similar enquiries had lately been made.—Yours, etc.,

HENRY HARBOUR.

### ACTINOGRAPH.

SIR,—With respect to Messrs. Hurter and Driffield's remarks upon the "Actinograph," I should be glad, with your permission, to offer one suggestion to them solely with a view of extending the usefulness and applicability of this valuable little instrument.

I quite agree with them as to the impossibility of employing a factor to correct the light scale for different latitudes, but they could easily attach the light scale in degrees (which do not seem to run at equal distances, being, I presume, logarithmic) to the edge of the diagram where on the cylinder January joins June. It would then be perfectly convenient to have a printed table, the cost of preparing which would be infinitesimal, and which could be sold at a small cost, for attaching inside the lid, giving light degrees for various times of day throughout the year, for any particular latitude, or even more simply still, the light degrees corresponding to each altitude of the sun, which, being read upon the light scale, would at once give the point of intersection for the stop number and so enable the one instrument to be employed in any latitude. I have no doubt it would pay the inventors much better in the long run to popularise the instrument by extending its usefulness than to reserve the extra profit they obtain on the comparatively small number of instruments they make for special latitudes. If for any reason they think this suggestion inexpedient, it would surely be better to supply, say at 2s. 6d., special cylinders to replace the ordinary one at will, rather than necessitate the purchase of an entirely new Actinograph.

For my own information I should be very glad to have the light scale, which I would mark on my own cylinder, and should personally feel much obliged to the clever inventors if they would send a diagram the length of the engraved part of the cylinder, which I have no doubt you, sir, would be equally willing to reproduce *pro bono publico*.—Yours, etc.

W. A. W.

SIR,—I had read the book of instructions before the appearance of your suggestion in the last number of the AMATEUR PHOTOGRAPHER. I do not find that the objections I have raised to the efficiency of the instrument are in any way met in the pamphlet referred to.

The article by Messrs. Hurter and Driffield, which appeared in your paper, appears to be of later date than their book of instructions.

It is somewhat singular that Messrs. Hurter and Driffield found time to write at some length in your last issue in reply to an anonymous correspondent, on a subject connected with the Actinograph having only the remotest interest for photographers working in these latitudes, whereas they state their inability to reply to my letter of the 8th ult. for want of time.—I am, etc.,

Brighton, March 12th, 1892.

W. L. NOVERRE (Colonel).

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### SOCIETIES' REPORTS.

SIR,—I should like your permission to endorse the letter of "A Beginner" respecting "the reports of Societies' meetings." These have long been the weak point in your paper. What the idea can be in printing them is beyond the comprehension of the ordinary reader. In this week's number you give a report of some thirty meetings. In only about two of these is there any attempt to give information as to what was really done, as your subscribers read for information. These two or three pages each week are practically barren. Although I fully sympathise with "A Beginner," I am

AN OLD SUBSCRIBER.

SIR,—Your correspondent "A Beginner" has in inexperience quite failed to grasp the intent and purpose of reporting Societies' meetings. They are simply items of *news*, recording briefly the working of the various Societies. They are not intended to form an instruction book, any more than a report of a concert is expected to include a treatise on music. In my experience very few papers read before Societies are worth reporting, for on the one hand a paper may consist of a series of disjointed remarks from a few hastily compiled notes, and will occupy, perhaps, from ten minutes to a quarter of an hour, the remainder of the evening being spent in desultory conversation, called by courtesy "an animated discussion." On the other hand, when a member troubles to write his paper out it will generally be found to consist of extracts from previous volumes of the photo magazines. In neither of these cases would the paper be worth more than a



mere statement to the effect that so and so gave a paper on blank. I think, as a rule, Secretaries may be safely left to decide whether anything has been said of sufficient novelty or value to warrant reproduction. I should recommend "A Beginner" to get some back volumes of the AMATEUR PHOTOGRAPHER. He will find in them plenty of able papers on every subject. Lastly, many Society Secretaries find it a sufficiently arduous task to keep the meetings going without undertaking to give verbatim reports of matters which have appeared in the papers repeatedly.—Yours, etc.,  
A SECRETARY.

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## NON-VIBRATING LUGGAGE-CARRIER.

SIR,—I frequently see queries in your columns, and those of the *C. T. C. Gazette*, as to the best means of carrying camera and kit on tricycle. From considerable experience I find that there is no necessity for spring carriers; the great thing is to pack tightly. My bag for tricycle opens out like the generality of knapsacks. I double the focussing cloth (an ample one), lay it in the bag, placing the baseboard downwards; I then fold the loose ends of cloth over the focussing screen. The tripod top wrapped in a duster, and the lens case are packed tightly by the side of camera, and the double backs in cloth bags are placed on the top of focussing screen, thus protecting it from damage. The bag is then fastened up by double flaps, with straps and buckles, and placed on the ordinary gridiron-pattern luggage-carrier. Two long straps then encircle the whole, including the tripod legs, which are placed on the top of bag. I was unable to find a suitable bag without going into great expense and getting something far too heavy, so I cut out a brown-paper pattern and took it to an india-rubber merchant, who make it in rubber canvas, which, when stiffened at the sides with pieces of thin wood, answered wonderfully well. Camera, etc., have travelled many miles in this way, sometimes over bad roads, without the slightest damage, and, further, I have carried such delicate cargo as butterflies and moths, pinned in boxes, for scores of miles without losing an antenna. The only extra precaution taken in the latter case was to wrap the boxes in some of my clothes, to isolate them from direct jar, and then pack *firmly*; that is the main point. I would add that the person who does not combine cycling with the camera misses a great deal, for a light, well-made tricycle will carry the photographer afield to nice quiet out-of-the-way spots, and that in a quick and enjoyable manner, so that even if his plates should prove to be over or under exposed, he still can look back on a pleasant ride, and feel that his holiday has not been altogether wasted.—Yours, etc.,

J. D. PEARSON.

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## PHOTOGRAPHIC CONVENTION.

SIR,—I have the honour to inform you and your numerous readers that the next Photographic Convention of the United Kingdom will be held at Edinburgh, during the week beginning on the 11th of July prox. The hall of the Geographical Society in the National Portrait Gallery, Queen Street, Edinburgh, has been secured for the meetings.

Later on I shall have the pleasure of sending you fuller particulars of papers, excursions, etc. In the meantime I shall be glad to receive the names of intending members.—Yours faithfully,  
F. P. CEMBRANO, JUN. (Hon. Sec.)

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## HYMN SLIDES.

SIR,—Having only just got my AMATEUR PHOTOGRAPHERS for the last five weeks through an error of my newsagent, I have only seen the queries of where to get hymns for slides and the answers to the same to-day, and having tried the places mentioned by E. A. H. some time ago, and failed to get them, will you therefore allow me to tell W. P. C., query 5432, that I always make a negative of the hymn I want to use, and then block out all except the words, and then by double printing print the words and then the floral border on the lantern slide; the floral border negative I get from Mr. Christie, West Street, Sheffield, who, I have no doubt, would supply W. P. C.—Yours, etc.,

J. A. WATSON.

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## ALUMINIUM.

SIR,—I have read with much interest the letters in your columns respecting the cost of aluminium.

On the 10th inst, there appeared in the *Times* a letter from

Sir Henry Bessemer (which I send you herewith) on the subject of "One Pound Notes."

In the course of this letter, in referring to a suggestion for the use of metallic notes or tokens, Sir Henry Bessemer states that "1 lb avoirdupois of aluminium costs at retail price 3s. 4d."

Can we have a better authority?—Yours, etc.,

March 14th, 1892.

H. TAUNTON-COLLINS.

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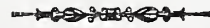
## CAMERA CLUB CONFERENCE.

SIR,—Will you kindly allow me to remind your readers that the Annual Photographic Conference organized by the Club will be held at the Society of Arts on Tuesday and Wednesday, March 22nd and 23rd; from 3 to 6 p.m., and 8 to 10 p.m. on the Tuesday, and from 3 to 6 p.m. on the Wednesday.

As there seems to be some misunderstanding on the point, I should like to state that the meetings for reading of papers and the discussions are open to all, and no tickets of admission will be required. The full programme has already been given in your pages. A copy of this programme will be sent to anyone desiring same. A slight alteration will be made in the Wednesday's arrangements, Mr. H. P. Robinson's paper coming on at 3 p.m. and Mr. Henry Blackburn's at 4.30 p.m.—Yours, etc.,

G. DAVIDSON  
(Hon. Sec.)

Camera Club, Charing Cross Road, W.C.  
March 14th, 1892.

Quarterly Examinations in  
Photography.

## QUESTIONS.

- 28.—Do you varnish your negatives, and is it essential, and how would you intensify a varnished negative?  
29.—Describe the process for printing on gelatino-chloride paper. Send a sample of your work.  
30.—How would you make chloro-platinite of potash? What is it used for?

*Latest Day for Answers, March 21st.*

- 31.—Is it possible to tone bromide prints; if so, how? Will albumenized paper prints tone after fixing?  
32.—Bromide prints frequently dry with spots like rain drops on them; what is the cause and remedy?  
33.—Why do chloride, bromide, and albumen prints turn yellow in the various processes?

*Latest Day for Answers, March 24th.*

- 34.—Is it possible to influence the character of the negative by altering the constituents of the developer?  
35.—How are lantern slides marked?  
36.—What influences mainly the tone of the finished print?

*Latest Day for Answers, March 31st.*

- 37.—Is it possible to obtain correct reproduction of a picture painted in oil colours with bright red, bright blue, and bright yellow as the prevailing tints; if so, how?  
38.—Describe the Kallitype process?  
39.—Write an article on the application of photography to the decoration of houses?

*Latest Day for Answers, April 7th.*

## RULES.

1. Answers must be received on the date stated each week in the AMATEUR PHOTOGRAPHER.

2. All answers must be preceded by the question, and should be written on one side of the paper only, and each answer must be on a separate sheet or sheets.

3. A *nom de plume* may be used, and must follow every answer, and be affixed to every specimen of practical work.

4. Answers are not limited in length, but preference will be given to concise answers without unnecessary amplification.

5. Those desirous of competing must apply to have their names entered. As these examinations are intended to encourage the study of the theory and practice of photography, authorities upon photographic matters and contributors to the photographic journals will not be allowed to compete.

6. Past successful candidates will not be allowed to compete.

NOTE.—No information of any kind will be given to competitors, and nothing but the answers must be included for the examiners. All other communications must be addressed to the Editor.

Marks will be given for all answers, and, when possible, the best three answers will be published. The answer will not be published till the week following receipt of the same, and the examiners criticise each answer sent in, and when no satisfactory answer is received, will supply one. Three prizes will be awarded at the end of each quarter. (Full syllabus on application.)

All communications to be addressed to:—"EXAMINATION DEPARTMENT," AMATEUR PHOTOGRAPHER, 1, CREED LANE, LONDON, E.C.



## Photographic Procedure.

By E. J. WALL,  
Author of the "Dictionary of Photography."

### SECTION V.

#### THE SENSITIVE MEDIUM AND ITS SUPPORT.

THE preceding tables are useful for making emulsions with all sorts of haloid salts, but although we have stated that it is essential to have no free silver nitrate, it is never advisable to allow merely the minimum quantity of haloid salts; they should, in fact, preponderate, so as to ensure there always being some free and uncombined bromide in the emulsion. Eder, in his valuable work ("Handbuch der Photographie," part iii., "Die Photographie mit Bromsilber-Gelatine," pp. 30-31), has a note on this subject which I translate in full:—

"What shall be the proportion of the bromide of potassium to the silver nitrate in practice? As the result of numerous experiments, the author adheres to the proportion of five parts of silver nitrate to four parts of bromide of potassium (=3.3 parts of bromide of ammonium). This is the proportion which he recognised several years since (1880) as the best, on the basis of his researches, undertaken in conjunction with Captain Toth. Bennett recommended 7 parts of ammonium bromide to 11 parts of silver nitrate, which Wilson also supported; Abney mixes them in the proportion 10 : 7½; and Burton in the proportion of 21 : 12½. From this it is evident that the author used more soluble bromide than had hitherto been customary. The following reasons influenced him: (1) With a considerable quantity of excess of potassium bromide, fog does not so easily appear by long cooking or treatment with ammonia; (2) the process of ripening by digestion may be pushed further than with a small excess; (3) the extremely finely-divided bromide of silver which dissolves in the bromide of potassium in the heat, and which is precipitated on cooling, as well as in dilution with the gelatine solution and subsequent washing, acts favourably on the plates; (4) mistakes cannot so easily happen by careless weighing on insensitive scales.

"That the excess of bromide of potassium acts favourably, Abney confirmed, some time after the author had published his proportions. He stated that the proportion of 20 parts of silver nitrate to 15 parts of bromide of potassium gave a much more sensitive emulsion, by the boiling process, than the proportion of 20 : 12 (*Photographic News*, 1881, p. 198). The proportion of 20 : 15 is, however, almost identical with that of the author, viz., 20 : 16. Abney explained this by saying that bromide of silver is soluble in bromide of potassium, and separates out on cooling in yellowish crystals, which in the washing give highly sensitive green bromide of silver. According to Newberry, the best proportion is 32.5 grm. of silver nitrate to 28.5 grm. of bromide of potassium for the boiling process; less bromide of potassium produces lower sensitiveness, more bromide, e.g., 30 grm., gives also a less sensitive and a flat emulsion.

"Should an emulsion contain excess of bromide of potassium considerably beyond the above stated proportion, flat and, indeed, even foggy emulsions will be obtained by the boiling process. Emulsions which contain no excess of soluble bromide of potassium, in which the bromide of silver has been separately precipitated and washed, ripen also on subsequent heating. They become more sensitive, but fog easily."

It is not to be expected that the gelatine, or vehicle used for suspension of the sensitive salt, is without influence on the final character of the emulsion, and it seems almost impossible to do more than exercise extreme care in selecting a gelatine, and, when having one, to adhere to the same. It might possibly be suggested that I ought at once to state the best gelatine to use, but there is very great divergence of opinion on this point, and whilst most authorities agree in giving certain tests, and in recommending certain brands, I have heard it said by a well-known plate maker, that he did not care much what brand the gelatine was which he was anxious to buy, if it answered to certain tests, as he could use any gelatine, whether greasy, dirty, or broken. Probably the amateur who wants to dabble in plate making will not care to experiment with gelatines, but will prefer to use a well-known brand. Eder specially recommends for hard gelatines, Winterthur, or, as it is usually called, Simeons, and Heinrich's;

as medium sorts, Kreutz and Coignet; for the soft kinds, Nelson's No. 1 and 2.

The apparatus necessary for an amateur plate manufacturer is neither costly nor numerous. First of all, he wants a light-tight jacket, and this can be obtained for nothing sometimes, or next to nothing, say for a penny, by going to any chemist and purchasing an empty tin, such as used for holding petroleum jelly. These have special tight-fitting lids, and are about 7 in. in height, and 6 in. in diameter, and hold about six pints. The lid is almost, if not quite, air-tight and water-tight, and it is therefore necessary to make a small hole on one side, to allow of expansion of air on heating, and escape of steam; any local tinman will solder a little piece of brass tubing, bent at an angle, in the hole, to prevent the ingress of light; and another hole fitted with a cork, through which passes a chemical thermometer, which serves to check the temperature of the water, will be of service. The cost of a thermometer varies from 1s. to 5s., according to graduation and length, but one graduated up to 200 is quite sufficient for any photographic work.

A gas or Bunsen burner or spirit lamp will be necessary, of course, and also a heavy wire tripod of about two inches in height, to keep the vessel containing the emulsion from the bottom of the tin. I have had made a stout iron wire tripod, with an arm projecting at one side, with a ring at the top, which serves to hold the neck of the flask and prevents it from rising, which it would do if little emulsion and a lot of water were used. A flask or two is necessary, and these should be preferably pear-shaped and of Bohemian glass, and one 10 oz. and one 20 oz. will be quite enough to start with. Besides these one or two beakers would be advisable, though not absolutely essential.

For chemicals we require: bromide of potassium 4 oz., iodide of potassium 1 oz., nitric acid 1 oz., hydrochloric acid 1 oz., nitrate of silver 2 oz., distilled water 2 gallons, chrome alum 1 oz., rectified spirit 5 oz., liquid ammonia .880, 8 oz., gelatine, Heinrich's hard half pound, Nelson's soft half pound, and we are ready to start work provided we also have a piece of canvas, with about eight holes or mesh to the inch (lineal). These are the quantities to start with; of course, as success attends our 'prentice hands we may start making larger batches, and shall therefore require larger quantities, but it is always advisable to begin with small batches, say 2 oz. of emulsion, and then test the same on plates before making in quantity.

We shall start next week to consider how to make emulsion by various methods.

**The Pilsen Photographers' Lamp.**—In order to meet not only the demand for arc lamps, but the exacting and varied requirements of photographic artists, the Pilsen Electric Company have designed a lamp which is now in daily use in several large photographic studios. The apparatus consists of a specially constructed Pilsen lamp, mounted in a large dome reflector, four feet in diameter, and hung from a counterpoised arm. The arm about eight feet in length, and the lamp can be set at any desired radius from the centre. Ball and socket joints are provided both at the centre support and at the extremity of the arm, connection with the lamp being made by flexible cables. The dome swings on trunnions, and can be set at any desired angle by a clamp, but a great variety of positions can be used by means of the two ball and socket joints alone. The lamp is usually inclined at about 45 deg. The lower carbon is the positive, and is 20 millimetres in diameter; a very soft-cored carbon is used, a special core preparation being filled into hollow carbons by the Pilsen Company. The negative carbon is 15 millimetres. A current of 50 amperes is carried, and the volts vary from 47 to 56. Considerable difficulty was experienced at first with unstable arcs, which ran round the edge of the carbon roaring and flaring. This has been overcome by careful attention to the freedom of the feed and to the quality of the positive carbon. A 9in. enamelled iron bowl reflector serves to screen the direct rays of the arc from the sitter, and the main part of the light is thrown directly on the whitened interior of the dome. A very well diffused light is thus obtained.



## Elementary Photography.

BY JOHN A. HODGES.

### CHAPTER VII.

#### THE DEVELOPMENT OF THE PLATE.

A Definition of Development—Preparations—Mixing the Developer—A "Normal" Solution Defined—Getting Ready for Work—Procedure—The Avoidance of Dust—How to Apply the Developer to the Plate—Under-Exposure; how to Treat—The Appearance of the Image—How to Examine the Negative—Judging "Density"—Development Continued—A Second Examination—The Appearance of the Image—The Use of the Clearing Bath—Preparing the Fixing Bath—Precautions—Fixing the Negative—The Action of the Fixing Bath Described—Washing the Negative—Draining and Drying—How to Handle a Negative—"Fringing"—A Useful Suggestion—The Appearance of an *Under-exposed* Negative Described.

It has been truly said by no less an authority than Captain Abney, whose works upon photography should be studied by all who wish to excel, that the development of the photographic image is both an art and a science; and probably few experienced photographers will take exception to the statement.

Development, of course, can only be carried out in the non-actinic light of the dark-room, for although the plate has been exposed to light in the camera, and has received therein the image cast upon it by the lens, it is still as sensitive to white light as before, and the slightest exposure to such would totally obliterate the image. This being so, we may take the slides to the dark-room and make the necessary preparations for developing our first negative. We commence by mixing our developer, and, to prepare a "normal" solution, that is to say one of medium strength, neither weak nor strong, which should serve, if we have correctly timed our exposure, to develop a good negative, we proceed as follows. Into one of the 4 oz. measures we pour 3 oz. of clean water, then with the minim graduate we add, in the following order, 60 minims of the "pyro" solution, 40 minims of the "bromide," or "restraining," solution, and 30 minims of the "ammonia," or "accelerating," solution—stirring the mixture well with a clean glass rod.

All white light must now be excluded from the room by putting the non-actinic screen in position at the window. The plate which we first exposed should then be removed from the dark slide, and, after its surface has been lightly brushed with the broad camel-hair brush, laid, with its sensitive surface upwards, in the ebonite tray which we have reserved for developing negatives. Dust is one of the photographer's greatest enemies, and the object of dusting the plate, both before and after exposure, is to remove any small particles which, notwithstanding all precautions, will find their way on to the plate. The developer is now poured, with a gentle sweep, over the plate, in such a manner as to cover its entire surface with one flow of the solution; the operation requires a little knack to perform it successfully, but it is easily acquired. It is for this reason that we have mixed up rather a generous amount of solution, and when the reader gains a little experience he will find that 2 oz. of solution will suffice for developing a half-plate. If the solution does not entirely cover the plate, or only does so in patches, the negative will probably exhibit "developer markings," which may show in the print. It is well, in commencing development, not to allow too much light to fall upon the plate, therefore the dish containing it should be removed to the table, which we have assumed to be on the left of the sink. It is better not to allow the solution to remain stationary, but to rock the dish with a slight oscillating motion, which will cause the developer to flow in even waves to and fro over the

plate, and will ensure uniform development and an immunity from stains. The development of the "latent image" is one of the most beautiful experiments which modern science has revealed to us, and one which cannot fail to fascinate those who witness the process for the first time. If, after the solution has been allowed to remain upon the plate for about two minutes, we perceive no indication of a change in its appearance, we may conclude that the plate has been somewhat under-exposed, and, to remedy this, we measure out another 20 minims of the ammonia solution, pour it into the 4 oz. measure, pour the developer back from the tray on to the fresh solution, and, after a stir with the glass rod, again pour it over the plate. The object of making the addition in this way is to thoroughly mix the solution, for if it were imperfectly mixed, unequal development, or stains, would result, and the negative would consequently be spoiled. The plate must now be carefully watched. Probably after the strengthened solution has been acting upon it for about 30 sec. a portion of the plate will begin to darken, the part represented by the sky; this will be followed by the walls and roof of the house; the fence and objects in the foreground will also become visible. At this stage we may remove the plate from the developer, and, after giving it a slight rinse under the tap, to avoid the formation of stains, we proceed to examine it more closely by holding it up to the orange light of the non-actinic screen, not, however, for too long, for undue exposure, even now, might cause a slight veiling or fog. Our hasty scrutiny will show us more distinctly the detail of our negative, but we shall probably notice that although it appeared very black and dense when in the dish, even the darkest portions seem thin when viewed by transmitted light. This proves to us that development has not been carried to a sufficient extent, and if we were to arrest the process here, we should find when the subsequent necessary operations had been completed, that we had a mere ghost of an image which for practical purposes would be valueless. When judging the "density," as it is called technically, of the developed image, we must remember that the negative will always appear to be denser before the next operation of fixing than it is in reality, therefore an allowance must be made for this fact. We, therefore, return the plate to the tray, and having added another ten minims of ammonia solution as before, again pour the developer over it, continuing the rocking motion as before. The appearance of the plate will now quickly alter, further detail will appear, and the image will gain rapidly in vigour, until a point is reached when nearly the whole surface of the plate will appear obscured. The plate should then be again removed from the tray, and after a rinse under the tap, submitted to a second examination by transmitted light. It will now be observed that the image has considerably gained in density, and if the highest lights, that is to say, the blackest portions of the negative, appear nearly opaque, it may be assumed that the plate has been sufficiently developed, and after a good wash under the tap it may be placed in a clean porcelain dish, in which some of the alum clearing bath has been poured, and allowed to remain therein for a couple of minutes, while we are preparing the fixing bath. Into the dish which we reserved for the special purpose, we pour 4 oz. of this saturated solution of hypo, adding to it 9 oz. of water, and well stirring. In all our dealings with this chemical we must take great care not to contaminate either dishes or measures with it, and if any of the solution should be spilled upon the table, it should be immediately wiped up with a cloth. The negative may now be removed from the alum bath, and after another thorough wash under the tap, should be placed in the fixing bath. Up to this point all



the operations have been conducted in the non-actinic light, but when we have safely placed the plate in the fixing solution, we may remove the non-actinic screen, as white light at this stage will not further affect it. The object of the fixing bath is to dissolve out of the film all the sensitive silver salt which has not been acted upon by light. It will be instructive to watch the change which the plate will undergo after being placed in the fixing solution. The back of the plate will rapidly lose the creamy appearance which it previously exhibited, and the unreduced silver will be quickly dissolved by the solution. After the plate has been allowed to remain in the fixing bath for about ten minutes it should be removed, and if the back of the plate has quite lost its white creamy appearance, it may be safely concluded that the operation is complete; if, however, some patches of white still remain, the plate must be returned to the solution until all such signs disappear. The plate should then be most thoroughly washed to remove all traces of the fixing solution, for if any traces of hypo be left in the film, it will in time cause the negative to become discoloured, if not to entirely fade. The negative should, therefore, be held by its edges under the tap, and the water allowed to run over it for about a couple of minutes, after which time it may be placed in the grooved rack of the washing trough, which should then be placed under the tap and a gentle stream of water allowed to run through it. About two hours of this washing will be found sufficient for all practical purposes. Although in the course of the foregoing operations it will be impossible to avoid handling the negative to some extent, the tyro should understand the right way in which to do it. The plate whilst wet must never be held between the thumb and fingers, as an indelible impression of them in the gelatinous film would result, which would, of course, be duly recorded in each print made from the negative. When it becomes necessary to examine the plate during development, it should be raised from the bottom of the dish by cautiously slipping the nail of the forefinger underneath it, when, its edges being held between the forefinger and thumb of the other hand, it may be readily lifted from the solution. Even this, however, should not be done more frequently than necessary, as the heat of the hands, more particularly in hot weather, slightly warms the gelatine, and causes the film to partially detach itself from the glass—this defect is known as *frilling*.

Let us now remove our negative from the washing tank, and hold it up to the light with a view of ascertaining its quality. Now, it is well nigh impossible to describe the appearance of a properly exposed and developed negative in language which can be appreciated by the beginner, and I much wonder that plate makers, or dealers in photographic apparatus have not conceived the idea of selling sets of negatives showing the result of over, under, and correct exposure. Such assistance would be of immense educational value to beginners, and I throw out the suggestion in the hope that someone may think it worth acting upon. Upon examining our negative, we shall, in all probability, find that it is somewhat under-exposed. We, to some extent, anticipated this result when we failed to get any trace of an image with what we called our "normal developer." If we look carefully at the negative, we shall notice, also, that some portions are represented by patches of clear glass in which no detail can be seen. This, however, would not happen if the negative were properly exposed, in which case some detail should be visible even in the deepest shadows, which are represented by the clear portions of the plate. The negative will, probably, also be wanting in gradation, that is to say, a print made from it would appear hard, with chalky high lights and heavy shadows, with an absence of "half tone," as the intermediate shades are designated.

From such a negative it is extremely difficult to obtain satisfactory prints, and, whenever it is possible, it is better to make a second negative, giving a longer exposure than before. When the reader becomes more proficient, and is able to develop a satisfactory negative, he will do well to make it a rule to at once destroy any plate which by miscalculation of the exposure, or from other causes, turns out to be under-exposed, for from such he will rarely be able to obtain even passable prints.

It was with a view to possible errors of this nature that we made the three successive exposures on the same subject, recorded in the last chapter, and, with the object of acquiring more information on the subject of development, we will now proceed to develop the second plate.

(To be continued.)



## THE BIO-PHANTOSCOPE.

THE following description of a new contrivance called the biophantoscope is taken from a local provincial paper, and if true it reads as bordering on the marvellous:—

"Mr. Rudge, the well known electrical and mechanical engineer of this city, whose inventive genius is well known, has recently brought out a new invention, for a description of which we are indebted to Dr. Preston King, resident medical officer at the Royal Mineral Water Hospital. Although the name Biophantoscope (Dr. King writes) is a somewhat formidable one, yet its meaning is simple, and when translated into the vulgar tongue it implies 'life-like appearance,' and indeed it well maintains its name. I had the pleasure of a private view of this ingenious contrivance a few days ago. It may be described as a mechanical arrangement by means of which a series of photographs is, through the medium of a magic lantern, thrown upon a screen in such a manner that the picture takes upon itself all the features of silent animated life. Horses in motion, boys playing leap frog, ballet girls dancing, or any other of the innumerable objects of animal life, may all be shown on the lantern screen with a truthfulness which almost surpasses nature itself. Attempts have for long been made, by means of mechanical slides and dissolving views, to represent upon a screen the natural movements of life; but it has remained for Mr. Rudge to hit upon the happy invention by which this end can be obtained. By means of his Biophantoscope we see, perhaps, a portrait depicted upon the screen; and, as we watch, and admire the excellence of the photograph, it may be of some well-known face, we notice a curious twinkling occurring about the eyes, the lips slightly part, the mouth widens, and a broad grin overspreads the features, which is involuntarily imitated by the onlooker; then, while we still watch, a change comes over the countenance, the brows contract, the lips close, the jaws are set, and we see a face moved by the deep emotions of human passion. In all these various changes the movements of the facial muscles, and the wrinkling of the skin, can be seen with so much accuracy that we almost believe we have a living being in flesh and blood before us, and not simply his illumined representation upon a paper screen. I hope that before long we shall hear more of this Biophantoscope. There are many of us still living in this utilitarian age who delight in inventions of this kind for their own sake; inventions which may be of little direct use to mankind at large, but which nevertheless mark the steady advance of science and the gradual triumph of mind over matter."

We have also received the following from Mr. E. S. Tylee:—

"I have seen the apparatus in action, and can confirm all that Dr. King says in its praise. We are all familiar with the ordinary action-slides of the well-known magic lantern. It requires the boundless imagination and uncritical temper of childhood to take much pleasure in their mechanical and clumsy jerks and capers. But Mr. Rudge can now show us the natural action of every muscle and sinew projected on the skin clear and distinct as a reflection in a polished mirror. The spectator, seeing at first the mere quiescent portrait on the screen, can hardly repress a start as the luminous face takes on in turn expressions of anger, merriment, disgust, and astonishment, the actual owner of the said face being perhaps a hundred miles away. If Mr. Rudge had flourished in the "good old times" I fear our judicious forefathers would have expended a portion of the city funds in the faggots necessary to burn him. As it is, I hope his fellow citizens will prove their share in modern enlightenment by bestowing on him the attention and honour his fruitful labours deserve."



## The Study and Practice of Art in Field Photography.

By A. HORSLEY HINTON.

(Continued from p. 190.)

### VI.—THE UTILITY AND FUNCTION OF HORIZONTAL LINES.

LEST there be any misunderstanding as to our purpose in writing these chapters, we would again point out that in no wise do we seek to lay down new laws, nor to reiterate such as have been insisted upon by others. Not one wit less than the great author of "Modern Painters" do we "dread the enunciation of anything that may seem like a conventional rule," but it may be that some of our readers have not the opportunity or the aptitude for observation, and to such we may be of use in awakening interest in and drawing attention to things which have hitherto been by them passed unnoticed, and if our remarks do not help them to successful art, we may at least assist to the avoidance of egregious error.

And now, good reader, if such natural objects, such landscape features as we may select do not appeal to you, do not reject them as unworthy of attention, but give us and them a patient hearing and consideration. Take our suggestion, and then observe for yourself in the open field—not once or casually, but whenever occasion offers, and then with serious intention. There are objects, there are effects in nature which appeal immediately to the senses, as the sweetness of sugar does to the palates of most; but there are also effects which we learn to like after a while—it is *the acquired taste which comes of culture*. The former effects are vulgar as the latter are refined; and, depend upon it, beauty which appeals to the educated senses is more worthy our pursuit, it is more lasting, and does not soon pall upon our taste by repetition.

The subtler beauties of nature can only be learned by intimate acquaintance; the teacher may show the way and may suggest, the student must cultivate the knowledge.

If the foregoing, as a general principle, be true, it has a far-reaching application in our photographic as in all art work; but the present is scarcely the opportunity for following a somewhat philosophical theme. As to the office and importance of horizontal lines in a landscape composition we may now occupy ourselves.

It will be readily understood that in marshy and therefore flat country the disposition of objects generally is such that strongly indicated horizontal forms and lines frequently recur, so much so that were it not for the presence of well-marked and obtrusive objects as trees and houses, which, rising from the ground, are at right angles to the horizon, it might be expected that a simple open landscape in a flat locality would be unpleasantly monotonous. This, however, we feel is not the case, and probably no landscape is so empty as to be devoid of interest and beauty *when understood*, and studied sympathetically, for, apart from the fact that as the level landscape recedes the melting of the rich colour of the nearer regions into softest grey of distance has itself a charm which grows upon one the closer it is studied, the plain is rarely equally illuminated, and the growth of herbage is sufficient, if the light be well chosen, to fill the poorest region with interest, and make it picturesque. In such positions, moreover, we often get an opportunity of noting how isolation gives importance to an insignificant object. If the far-off confines of our marshy tract be not bounded by hills or rising ground, a few straggling trees, a stack, boat-house, barn, or similar object will come sharp against the light sky, and, though

distant and small, its solitariness makes it perhaps more powerful in summoning attention than a great mass of foliage, or a compact group in a landscape of another character.

Looking to the growth of rushes and humble plants to give variety to the level surface, it may be noted here that whilst at all times of year nature everywhere possesses a beauty peculiar to the season, yet probably the reader will find it less difficult to select his subjects when the vegetation is well advanced. Colour is, of course, richer and fuller, but what is of more importance to us, the taller grasses and reeds break up the plain into bold masses of light and shade, and soften some of the harder forms of river banks and ditches, which latter themselves assume greater importance, because of being less full of water.

In addition to the above remark as to the season of the year, we may make two other practical suggestions, although the advice thereby conveyed savours very much of that conventionality which we are most anxious to avoid, wherefore it must be accepted subject to the modification of circumstances. Firstly as to the position of the camera, and secondly as to the position of the light.

We find then that, generally speaking, the best effects have been obtained when our tripod-stand is of full length, or rather higher than is usual, or when we have taken our stand upon a slight, a very slight elevation. From such a position we are just able to catch the meadows and marshes away over the tall hedge of rushes close at hand, or the more distant hedgerow of white-thorn and bramble; whereas if we kneel or sit upon the ground, our view is at once shut in and confined within narrow limits.

It is not long since a discussion was carried on in the photographic press as to the proper position and elevation of the hand-camera during exposure, one writer advocating the holding the camera on a level with one's head, another asserting that the best results were obtained from the instrument when at about the height of the operator's waist. On such a subject there can be no fixed rule; the altitude of the camera must be decided independently to suit every individual subject, and we only advise our reader who is at work on a flat country, to which he is perhaps unaccustomed, to be provided with a camera-stand which will admit of his using the camera as high above the ground as his own stature will admit of, and also to select generally, and if possible, some slight elevation, because, from the nature of the locality, the greater part of the distance, perhaps the whole of it, would be cut off by having the camera too low down. For instance, water-docks, plantains, arrowheads, and rushes will often form the foreground of our pictures, but if these be at all near to the camera, and the camera be too low down, these otherwise desirable and characteristic objects will, through the lens, occupy so large a space as seen on our plate that the little narrow strip of mere distant landscape above and beyond, and so full of beautiful gradation, is lost sight of. We have not infrequently been surprised and disappointed at the changed aspect of a scene made by the slight difference in the height of one standing naturally, and in the stooping position usually assumed when watching the image on the camera screen. The same thing may have been noticed when traversing a country by railway, by carriage, or in the saddle. From the trifling elevation afforded by the above means of travelling, we have, perhaps, noted down the particulars of some pleasant picture-subjects with the intention of visiting them again with the camera or sketch-book; but how often have we been disappointed on revisiting these spots on foot, to find when standing on the ground some hedgerow or bank now cuts off the very scene which



we had before admired—an elevation of from three to five feet would enable us to see over such obstruction, and it was with the memory of a few little experiences of this sort which prompted us at the commencement of our last chapter to recommend the earnest photographer to persistent pedestrianism.

Our second proposed remark was as to the position of the light. In a previous chapter we noted the striking transformation often brought about in a comparatively uninteresting country by getting the sun in front of us. Many, we might almost say the greater number, of the most beautiful effects are obtained against the light, but somehow when at work amongst the river marshes, say in the late summer or the autumn months, we have found ourselves unconsciously giving preference for the sun to the right or left, or even behind us, and certainly we find, upon reference to a series of some twenty or thirty photographs made in just this kind of country, the best, the most successful as pictures are those in which the sun was not in front of the camera, albeit we would prefer the sun low down, as in the early hours of morning or later afternoon. We may not find it easy to theoretically account for this, unless it be that the sun when on either side of us gives us, when it is not too high in the heavens, just those long horizontal lines to consider which was the first purpose of this chapter.

The beauty of curved lines, the necessity of balance, the harmony or contrast of lines, and similar matters of importance (rules, if you will) have often been spoken of and discussed, but we think the importance of horizontal lines has been too seldom remarked.

We believe we shall not be asserting over much when we say that whenever the nature of the subject makes a well-marked horizontal line possible, such a line is *essential* to its perfection, and may on no account be dispensed with, and as the photographer can control his composition to so limited an extent it behoves him to study well the influence which such lines have upon a composition, and also to become acquainted with the physical conditions which may cause them.

In mountain scenery, when from between the hills we catch a glimpse of the lake at the mountain's foot, note the importance of the horizontal lines formed by the light on the water's surface, or possibly by an abrupt turn in the mountain path; in such an instance it is perhaps chiefly useful as a contrast to the many oblique lines; and then what a telling note in the picture is the horizontal line of the cottage roof just visible over the brow of a sloping hill; the eye cares not whether it be a house or a hay-stack, but feels the relief from many slanting or vertical lines.

Recall for a moment some of those pictures which have most forcibly impressed you with their openness, their breadth, their suggestion of unconfined out-of-doors space, and see if this sentiment does not largely arise from the presence of certain bright horizontal lines or masses running through a great part of the picture; or try and analyse such picture and see if this feeling would be as powerful if those lines were suppressed or removed. And are not these the very feelings which the flat pastoral scene most strongly stirs within us? A feeling of expanse, far-reaching, limitless—a feeling which can only be mathematically expressed by a straight horizontal line—and whilst we cannot attribute any actual artistic beauty to a straight line it is probable that the sentiment awakened by such a line in nature is one of the strongest and most impressive.

Whence that feeling of delight when, as we cross the swelling hills, whose grandly-curved lines cut the sky clear and distinct, we suddenly, as one of the lesser hills slopes away on one side or the other, get a view of a long blue

line of the distant horizon? Is it the sea? Perhaps it is, but the same aesthetic pleasure would be felt were the distant horizon either land or water.

Or, ascending from a valley, look back upon the hills on the further side; they seem to shut us in, the eye longs to surmount the barrier or to pierce it. Climb higher, and again look back; now over and beyond the shoulder of one big hill we get a glimpse of the far-extended distance, hazy and blue is the horizon line, and how different the impression given! No longer hemmed in, the eye takes in the ups and downs of the hill tops, and then runs along the horizontal line of the distance with the consciousness of unlimited breadth of view.

Or yet again, watch the quick drifting cloud shadows across a level country, when the sun is not too high in the heavens, and only pierces the cloudy canopy at intervals. If somewhere in middle distance you get for a few moments a bright gleam of sunlight running across the landscape you will remember the sensation it awakens with pleasure. We are almost inclined to attribute much of the popular delight which is inspired by pictures of the sea or of any expanse of water to the predominance of horizontal lines.

Except when water is very calm, in which case the



elongated reflections tend to suggest vertical forms, the characteristic lines of water are horizontal—ripples, light, a surface current, or a ruffling breeze when seen from a little distance, break the surface of water, more or less horizontally. Another application of a light horizontal line is often seen in landscape painting, though its too frequent repetition is apt to give it the character of a trick rather than of purely artistic work. In nature, however, its appearance should be patiently waited for, studied, and seized when desirable. It is this. The various planes of middle distance will often seem to merge too much one with another, so that trees or similar objects, instead of coming away from those immediately behind them, appear to stick to them, they lack relief and distinctness, and all but the foreground appears flat. It may, perhaps, arise merely from our inability to render the very fine gradations of tone, or in photography at least it may be from absence of colour; but let the sunshine fall so that we get a full illumination of a field, an open space, land or water, which gives us a bright line running in between two more or less distant planes, and we immediately find a life, a strength imparted to the distance, the nearer objects now stand away whilst the more distant recede. Something of this effect is seen in our sketch of "A Backwater, etc." The kind of line we refer to is here seen between the tree stems, or where the foliage intercepts it, and gives a better idea of an interval of space, between the middle and the distance in the scene.



## The Lantern, and How to Use it.

By C. GOODWIN NORTON.

### CHAPTER IX.

#### BIUNIAL AND TRIPLE LANTERNS.

(Continued from p. 186.)

NEARLY all lanternists seem to agree that the star or six-way pattern dissolvers, which are all about the same in effect, are suitable for a biunial, but with a third lantern the dissolving is not so easily managed, especially if many effects are to be shown requiring all three lanterns to be used, either together or in irregular order, as sometimes happens. There are five or six systems of dissolving for triples, each having its own particular merits:—

(1) Three four-way dissolving taps, one to each lantern, each controlling its own jet only.

(2) The Chadwick-Steward system has means for coupling any two of these at will.

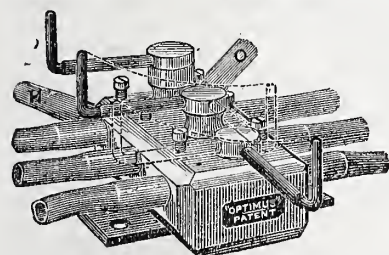


FIG. 25.

(3) One six-way for the two top lanterns, and one four-way for the bottom one.

(4) The Otway dissolver which has a dial plate to indicate which of the lanterns is on, all controlled by one lever.

(5) Perken, Son, and Rayment's triple dissolver acts in a similar

way to the three four-way, but all the three dissolvers are in one block (fig. 25).

(6) The Noakes dissolver (fig. 26) is somewhat similar to Otway's, but there is no dial plate to be read in the dark, and the lanterns can be used in any order or combination.

Every one of these systems has its own advantages; the first is the simplest, especially when many effects are shown, but two levers have to be moved each time of dissolving, and the operator is liable to make the mistake of turning down the light in one lantern before turning up that in the other. The Chadwick-Steward system avoids

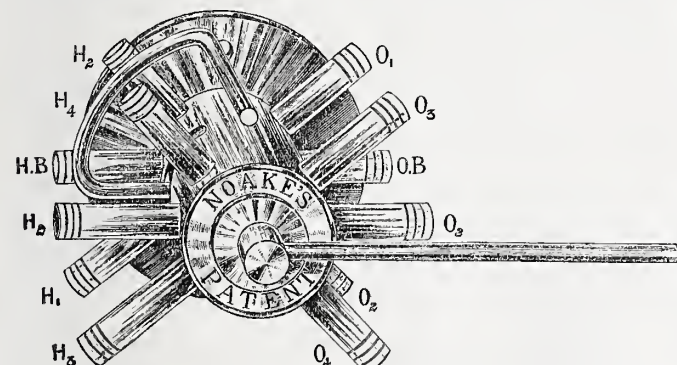


FIG. 26.

this difficulty, but the coupling is a little troublesome to make in the dark.

With the third, one of the lanterns controlled by the six-way must always be on, unless Noakes's Gem dissolver is employed.

With Perken, Son, and Rayment's dissolver there is no danger of the two gases mixing, the rubber tubes connecting it to the jets are not crossed, and the by-passes must be adjusted by a screwdriver; this prevents their being accidentally moved.

The Noakes triple dissolver seems at first sight complicated, but it is very simple to use when once learnt, as any two lanterns can be used as a pair for dissolving, and the third as an effect lantern, or all three used one after another.

To sum up; if a triple is required principally for effects, or by operators who only occasionally work it, use No. 1 or 5. If for a lecture with an occasional effect, Nos. 2 or 3 will be found suitable, but when the lantern is always used by the same person, either for effects or for a lecture, Nos. 4 and 5 will probably be found the best and most effective. Fig. 27 is a back view of Mr. Steward's Bridgman triple fitted with one six-way and one four-way dissolvers; it shows a neat method of disposing of the rubber tubing; but the bottom lantern should be used for the effects, as it is not so frequently wanted; in which case, the position of the four-way and the six-way dissolvers should be reversed. The tubes on the six-way are connected in the way usually directed in the dealers' catalogues, but the method given on page 185, March 4th, will be found more suitable.

All biunial and triple lanterns should have brass tubes fitted to the back, to carry the gases to the lanterns. Near the inlet of these tubes a stopcock may be placed, which may with advantage be of the screwdown pattern. These stopcocks can be used for several purposes—(1) As a means of safety by which all the lights can be extinguished together; they will not, however, prevent an explosion if

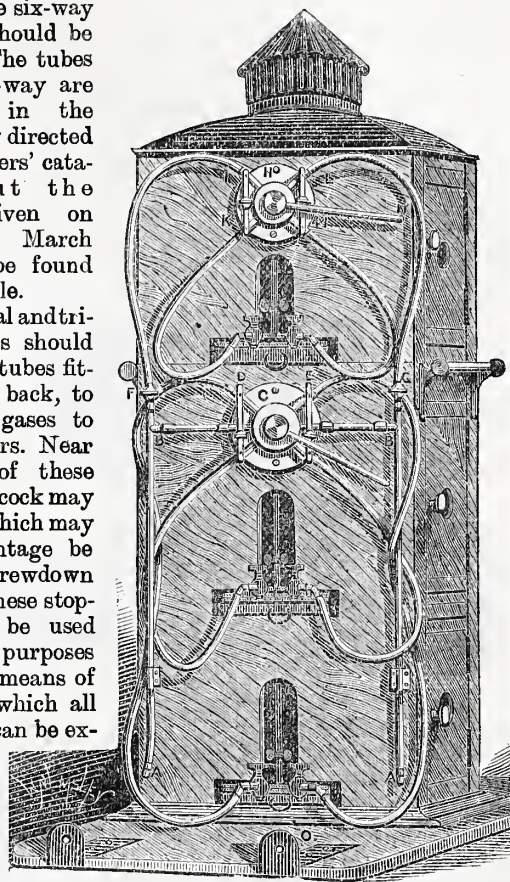


FIG. 27.

the two gases are actually mixed, either in the tubes or in the bag. (2) They can be used to regulate the supply of the gases to the lantern when the stopcock at the bag, or gas-bottle, or gas-bracket is not easily accessible. (3) As a cut off for the jets, the taps of which, having been adjusted to give their best light, need not be altered when the lantern has a short rest, as frequently happens at a lecture or entertainment.

In order that one picture may be perfectly dissolved into another, it is necessary that the two discs should exactly coincide when projected on to the screen; with a triple there would of course, be three. To effect this the lens tubes must incline a little towards each other to get the centre of the rays of light from each lantern in the same spot on the screen. To this end the plates on which the lens tubes are fixed are hinged to a smaller plate to allow each one to move independently. Though it may appear



to the novice a very simple matter to raise or lower the two lantern fronts to their proper place, and then to fix them with the circular nuts shown in fig. 20, p. 185, those who aim at exactitude will soon find that this is one of the most tiresome things the operator has to deal with. In the first place the tubes when extended to 10 or 12 inches are very heavy, and as a great part of the plate must be cut away to allow the ray of light to pass from the slide, it is liable to bend under the strain, and the slightest jar will cause the tube to move from its place, especially as the tubes being telescopic are seldom or never rigid enough to support the weight of the large lenses now rapidly coming into general use. One difficulty in the way of supporting these front tubes from the base is that they are round, consequently it is not easy to fix anything to them, especially as the distances between them and their distance from the base constantly vary and a small amount of pressure will put them out of shape.

Condensers, front tubes, and objectives would be much more effective and convenient to use if they could be made square instead of round, but doubtless the question of expense has a great deal to do with this. It costs much less to have a tube turned up in the lathe than it would to have it planed true by a machine; and again, two round tubes can be screwed together, whereas square tubes cannot be. As the lantern gets more popular, perhaps someone will bring out a pattern with square fittings instead of

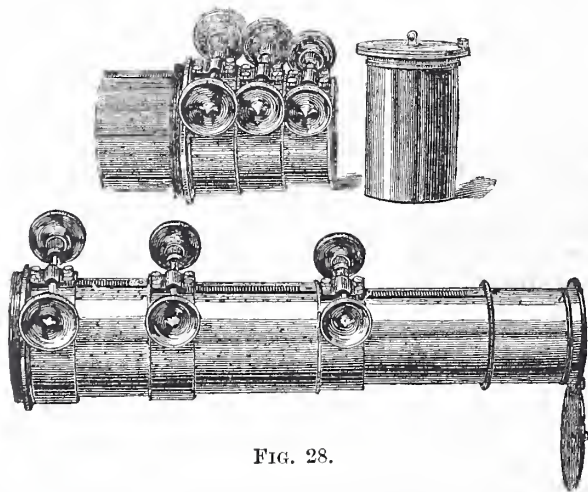


FIG. 28.

round. Mr. Hughes has already done something in this way with his patent rectangular condensers for enlarging. To resume, one way of dealing with the weak plate is to increase its thickness; another is to strengthen it by having a flange standing at right angles to it all round. To keep the tubes rigid, some authorities recommend a rack to each draw (fig. 28).

This certainly is convenient, as any focus lens can be used from 5 to 12 in. without having loose parts or anything to screw or unscrew, and is of great value to the travelling operator, who never knows at what distance or what size of picture he may be required to show.

Another way is to have the lens tube in one piece. This does well enough for long focus, but should a short focus lens be employed, there is the trouble and time of unscrewing and screwing up again.

Mr. Steward's Premier triple has a frame fixed on the base to support the tubes, which can be adjusted to any position with the greatest nicety. This, of course, adds to the weight of the lantern, and the cost is proportionate, £150 complete.

Norton's simple support for biunials and triples will firmly connect the nozzles of two or three lanterns together, also support them from the base, and permit each one to be adjusted to any angle. This can be adapted to any lantern.

## How to Prevent Accidents at Lantern Exhibitions.

By "EXPERT."

AMATEUR photographers who make lantern slides may have occasion to exhibit them to larger audiences than that of their intimate friends, and as children often form the greater part of these audiences, it is well for everyone to take proper precautions to secure absolute safety at an exhibition. We have had several accidents this season at lantern exhibitions, two only of which have had a serious termination. Unfortunately, an accident at a magic lantern show is likely to have more serious consequences than at other forms of entertainment, because the room must be in darkness or semi-darkness.

The dangers from lantern entertainments arise from some defect in the apparatus, from unsafe means of producing the light, from carelessness or ignorance on the part of the operator, or from some act of malice, carelessness, or mischief on the part of the bystanders.

**Defects in the Apparatus.**—Oil lamps may overheat and form an explosive vapour if the oil chamber is badly constructed or is nearly empty. This can be remedied by seeing that the lower part of the lantern is well ventilated and by not turning down the wick or attempting to extinguish the flame until the room is cleared.

**Spirit Jet.**—The danger with this particular light is from a leak in the spirit vessel, or by the spirit coming through the wicks too fast. With this form of light always have a large wet cloth at hand, and also a smaller one; the former to extinguish any flame outside the lantern, and the latter to be used to cover the tray supporting the jet or to place over the spirit chamber to keep it cool.

**Safety Jet.**—An accident with this ought to be practically an impossibility, but a careless operator may set his lantern on fire by using an excessive amount of hydrogen, or by seeking for a leak in the tube or bag with a light, or by forgetting to turn off the house gas at the bracket at the finish of the entertainment.

**Mixed Jet.**—This jet is as safe as the safety, provided each bag is used for its own gas only, and that a steady and constant pressure is maintained while there is a light at the jet and for at least five minutes after it has been extinguished.

Safety valves and chambers have been pronounced by the best authorities to be useless.

**Ether Light.**—This should never be used where there are children or where an accident could happen from the light going out suddenly.

Sometimes the two gases get mixed round the plug of the dissolver and cause the tubes to be blown off. This may be prevented by having the plug reground and by putting a little vaseline on it, or by avoiding the one-plug dissolver altogether.

Among audiences of children there are always a few precocious youths who will crowd round the lantern to satisfy their curiosity or to display a love of mischief. The careful operator will always insist on having a certain amount of space entirely to himself; if the chairs or forms cannot be removed, a few yards of rope should be used to partition off a proper space inside of which no one should be allowed to pass. Sometimes this is a difficult matter, but as the lantern show cannot well be given without the operator, he can very easily insist on having his own way without giving unnecessary offence. In the event of a rush which often happens when the lantern is placed between the refreshments and the greater part of the audience, some sort of barrier is indispensable.

An oil lantern must of necessity be placed in the centre of the room, as it is impossible to show more than twelve or fifteen feet from the sheet with any effect, and as the lamp cannot be tilted, the lantern must be placed at a considerable height. Herein lies its chief danger; the structure on which it is supported is generally of a frail and temporary character, and is liable to be overturned at the slightest touch. It is difficult to suggest a remedy for this; a tripod is heavy to carry about, and its legs are in the way, and a strong table is not always procurable. Perhaps the best way of getting over the difficult is that suggested by Mr. Hepworth, to have four iron legs about five feet long to fit into staples in the lantern box, these should only cost a few shillings and do not add very much to the weight of luggage.

To prevent those accidents not intimately connected with the lantern itself, such as the sudden extinguishing of the light, the



gas jets should never all be turned out so as to leave the room in darkness; a careful person should always be at hand to turn them up full at a moment's notice. Should the children be numbered by hundreds or thousands, a sufficient staff of men, should be placed round the room, and especially near the doors, to prevent a panic and stop a rush. If there is a staircase the door at the bottom should be open, and fastened open; and careful persons should be on the stairs, especially at the angles or turnings, to prevent the children hurrying and slipping as they often do when laden with the spoils of the feast.

There is always a difficulty to get the persons outside to remain at their posts; they all want to see the show; and the same may be said of the gas man, he is never to be found when wanted.

As for those foolish persons who call "fire!" it seems impossible at present to deal with them. Perhaps a month's hard labour might be of some good, should one of them be detected; all that can be done is to prevent their reprehensible conduct from having any disastrous effect.

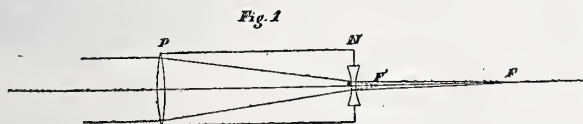
## Improvements in the Tele-photographic Lens.

BY T. R. DALLMEYER.

IN the paper that I contributed to the Camera Club, I pointed out that in the tele-photographic lens there exhibited, I believed I had accomplished the best possible result with the least expenditure of optical means. That lens, as your readers will remember, consisted only of two cemented combinations. It is well known that any single aplanatic lens can only define properly for the axial pencil, the definition falling off very rapidly when the pencil becomes even slightly eccentric; for this reason, in using two combinations only, the correction for the eccentric pencil has to be accomplished by a proper form ascribed to the negative element. The main drawback to this lens is, that although it may be corrected for outstanding spherical aberration for *any particular plane*, it is not rectilinear, and, moreover, it is impossible to make it so.

At the time of reading the paper, I mentioned that I was engaged upon the construction of a series of negative elements to be employed in conjunction with rapid portrait lenses of short focus.

As your readers are well aware, the main object in photographic lens construction is to attain the best possible definition for the eccentric as well as the central pencils, and in rapid portrait lenses the number of elements employed enable this to be carried out to a much greater extent than is the case with a single combination lens.



The improvement that I have made consists in employing, in conjunction with a particular type of portrait lens, a compound symmetrical negative element that is practically aplanatic in itself, and is also corrected throughout the entire field, but of negative focus. This construction permits of an excellent correction for the eccentric as well as the central pencils, and reduces distortion to a minimum.

Another feature in employing the particular form of portrait lens (introduced by my late father) is the possibility of correcting the complete combination (positive and negative) for outstanding spherical aberration throughout the entire field, for any chosen plane of object or screen.

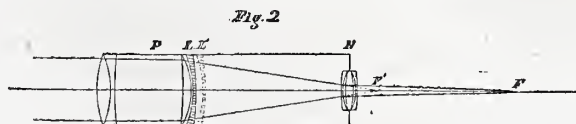
If a lens of this form is properly corrected for a near object, it will be found, on employing the same instrument upon a distant object, that it is no longer perfectly corrected, but outstanding aberration asserts itself. By employing the form of portrait lens illustrated (fig. 2), a slight separation of the back lens will entirely remove this.

This matter might strike one, at first sight, as being of little importance, but such is not the case, in that the main feature in the utility of this type of lens for ordinary purposes consists in the employment of *as large an aperture as possible*; first, on

account of rapidity, and secondly, on account of the fact that the larger the aperture the larger is the field that is covered, or angle included. Were it not for the possible means of correction referred to by the separation of the back elements of the portrait combination, the only other method of correcting the outstanding aberration would be the employment of diaphragms that would very materially affect both the important considerations.

I have been asked on frequent occasions whether still larger amplification could not be attained with the same camera extension; this, of course, is possible by employing negative combinations of shorter foci than the particular ones which I have considered a useful mean both for the angle included and adequate intensity.

It is a very simple matter for a given extension of camera to make the magnification very much greater than that which I have adopted, but the drawback is that the angle included again becomes very small and the loss of light considerable.



DESCRIPTION OF DRAWING.

Comparing fig. 1 and fig. 2, the positive element P, represented as a single lens, is replaced in fig. 2 by a portrait lens P, and the single negative element N in fig. 1 is similarly replaced by the double combination negative aplanatic system N in fig. 2.

When the lens, L, of the portrait combination is in its primary position, the correction of the negative combination is adjusted for near objects, but if the lens be focussed on receding planes by the slight adjustment of unscrewing the back cell and slightly separating the components of the posterior combination, a perfect correction for spherical aberration.

Again, if a tele-photographic lens of any fixed construction be focussed upon an object with a short extension of camera, it will be found that it is not perfectly corrected for a greater extension of camera. This again may be corrected in a similar manner by a slight adjustment of the back lens, L, of the portrait combination.

## Exhibitions.

### WAKEFIELD.

NOTHING could be better calculated to arouse universal interest in photography in a neighbourhood than a determined effort on the part of a society assuming responsibilities for the purpose, to promote some social function in connection with the favourite art science, to the fullest measure of success; and in this respect the Wakefield Society, yet in its novitiate, deserves unqualified praise and continued prosperity. The society's first exhibition and conversazione recently held in the Music Saloon, is not likely to be soon forgotten by the about 230 members and guests who attended, and the occasion has undoubtedly given the objects of the society a distinct fillip. The large room was tastefully decorated with lace curtains, mirrors, etc., while every arrangement had been made for the convenience of those present. The walls were literally covered with the best specimens of the photographic art, one side of the room being devoted to some especially fine professional work, and the other entirely to the work of amateurs, being members of the society. Long tables were arranged about the room, upon which were exhibited all kinds of apparatus, appliances, albums, etc.; and lantern-slide stands (kindly lent by the Leeds Society) filled with members' slides, and lighted from the interior, proved very effective. The exhibits were varied and numerous, and were chiefly contributed by Mr. A. W. Stanfield, J.P. (President); Mr. Isaac Briggs, J.P., and Captain Norwood (Vice-Presidents); Messrs. C. W. Richardson, J. H. Chaplin, H. Crutchley, Harry Shaw, R. Robson, G. F. Firth, E. Day, S. Bottomley, W. Wrigley, G. Parkin, H. Hall, and Dr. Clarke, of the West Riding Prison. An attractive feature of the evening was a miscellaneous musical programme.

### HOLBORN CAMERA CLUB EXHIBITION.

The third annual exhibition of the members of the Holborn Camera Club was held at Anderton's Hotel, Fleet Street, on Saturday last. It proved an immense success, nearly two hundred visitors being present during the evening. Mr. E. Clifton, Mr.



F. A. Bridge, and Mr. Horsley Hinton were the judges, and awarded the following prizes:—In Class I.—Mr. A. J. Golding; 2nd prize, Mr. Fred Brocas. Class II.—1st prize, Mr. H. West, 2nd prize, Mr. A. Bell. Class IV.—1st prize, Mr. E. H. Bayston; 2nd prize, Mr. Sharpe. Mr. H. Beckford was awarded a prize for the best set of half-plates. Mr. Alf. Hodges taking second prize. Messrs. Ebsworth and Thompson took 1st and 2nd prizes respectively for quarter-plate. Messrs. Chang and Phillips taking 1st and 2nd prizes in lantern slides.

### THE FRY MANUFACTURING COMPANY.

#### MR. A. R. DRESSER'S WORK.

The Fry Manufacturing Company, of 5, Chandos Street, Charing Cross, have a small but choice show of the leading pictures by Mr. A. R. Dresser, on the "Rough" bromide paper. The pictures speak well, we need hardly say, not only for the operator's work, but also for the paper. Most are enlargements from hand-camera shots toned with uranium, and some very effective studies are shown. Such well-known pictures, as "Evening," "The Caskets," "Ploughing," "A Winter's Day," and the well-known Zoo studies, need no praise, but for tone we personally think "A Scene in Amsterdam" is the most pleasing. Some fifty pictures in all are shown, and as admission is free or on presentation of visiting card, and there is much to be learnt, the exhibition is well worth a visit.

### Apparatus.

#### THE ILFORD ISOCHROMATIC PLATE.

The Britannia Works Company, of Ilford, London, E., have forwarded samples of their Isochromatic plates and yellow screen and screen holder. We have tried the plates in the particular department in which they should show their superiority over the ordinary plates, viz., in the copying of pictures, and certainly it is possible to obtain far more correct rendering of the colours. The plates work cleanly and give soft negatives, though great density can be obtained if development be pushed far enough. The special directions issued with the plates are:—

"INSTRUCTIONS FOR USE.—These plates are more sensitive than ordinary plates to the usual red or yellow light of the dark-room; therefore great care must be taken to use only a dull light of a deep ruby colour, and to shield the plate as much as possible during the manipulations. It will be found a good plan to cover the dish until the development is nearly completed. An amount of light which would be perfectly safe with ordinary gelatine plates is quite sufficient, with these colour-sensitive films, to cause fog and spoil the negative.

"DEVELOPMENT.—Ammonia should not be used, under any circumstances, for the development of these plates. Any of the other recognised formulæ will be found suitable, but we most strongly recommended the following:—

"STOCK SOLUTION. (This will keep for a considerable time)—

|                                                   |           |
|---------------------------------------------------|-----------|
| Pyro ... ..                                       | 1 oz.     |
| Sulphite of soda ... ..                           | 6 „ (av.) |
| Water, to ... ..                                  | 24 „      |
| No. 1.—Stock solution ... ..                      | 8 oz.     |
| Water ... ..                                      | 12 „      |
| No. 2.—Carbonate of soda (not bicarbonate) ... .. | 2 „ (av.) |
| Bromide potassium... ..                           | 20 gr.    |
| Water, to make ... ..                             | 20 oz.    |

"These solutions will keep for several days. For use take equal quantities of Nos. 1 and 2. Pour the mixture steadily over the plate, avoiding air bubbles; rock the dish gently, taking care to keep the plate well covered with the solutions. Do not hurry the development, but allow the plate to remain in the solution after all the details are visible, until the required density is obtained. With these plates and the above developer there is no danger of fog, except from light or over-exposure. In cases of under-exposure the above mixed solutions may, with advantage, be further diluted with an equal quantity of water. In cases of over-exposure, reduce the quantity of No. 2 solution.

"ALUM BATH.—After developing, well wash the plate under the tap, then immerse for a few minutes in the following solution:—Alum, 3 oz. (av.); water, 20 oz. Wash well, and fix as usual. Do not add anything to either fixing or alum bath, and never omit latter."

"FIXING.—Hyposulphite of soda, 1 lb. (av.); water, 40 oz. Leave in fixing bath for several minutes after fixation appears complete.

"Negatives on these plates develop without difficulty to full printing density. If found too intense, they may be reduced by any of the published methods."

"SCREENS.—For ordinary subjects it is quite unnecessary to use a yellow screen. Where it is requisite or desirable to use a screen, as in copying paintings, or taking landscapes, under special conditions, we recommend the Ilford Isochromatic screens. These are of the best glass and are optically worked. They will be ready shortly. No. 1 increases exposure about three times; No. 2 increases exposure about six times. These screens should be used *behind* the lens. They are made two inches square."

The screens are a great advance upon any yet placed on the market, so far as convenience goes, and are optically worked, and of English manufacture. They are two inches square, and fit into a metal frame, which slides backward and forward in a slot, which is permanently screwed to the camera front carrying the lens.

#### THE "MIALI" HAND-CAMERA.

JONATHAN FALLOWFIELD, of 146, Charing Cross Road, W.C., has sent us one of these cameras, shown complete in fig. 1. It measures 10 by 7 by 6, and weighs about 5 lb., and closely resembles a small Gladstone bag. The lens is the same as used on the well-known Facile, being an R.R. of 5½ in. focus, and is fitted with an iris diaphragm adjustable from the outside by means of the lever and indicator, D (fig. 2). The shutter works between the lenses, and is set by the indicator, E (fig. 2). F sets the shutter, and a touch on G releases the same. By an ingenious arrangement a special safety shutter, which otherwise works automatically, may be used for time exposures. Focussing is effected by moving the small hand round the circular plate. The finders are deeply sunk and perfectly adjusted to give the exact image as included on the plate. The plates are carried in special supply boxes and are inserted in the camera, as in fig. 3. Plate changing is effected by pulling down the handle, A (fig. 2), and pushing it hard back again. This brings a fresh plate from the horizontal to the vertical position, and holds it firmly in exact register. When all twelve plates have been exposed, twelve more can be inserted from the store box and the exposed ones removed by means of the now empty box, as shown in fig. 4. It is thus possible with one box to take out twenty-four plates, as one dozen can be fitted into the camera before leaving home. A socket, J (fig. 2), is provided



FIG. 1.

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FIG. 2.

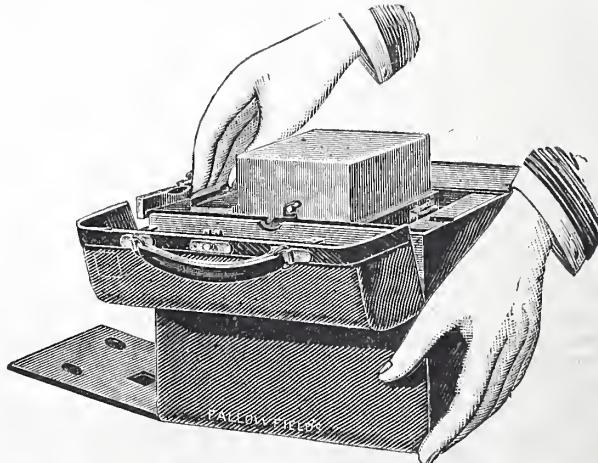


FIG. 3.



for use with a stand, and any special lens can be fitted if desired. The camera is a perfect marvel of ingenuity and workmanship, and yet is simple in use, and is also extremely elegant in external appearance.

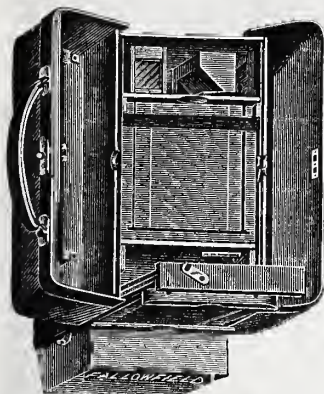


FIG. 4.

nide baths, though a combined bath is recommended. The following are the special advantages claimed for it and the instructions for using:—

Giving the same fine detail as any gelatine emulsion paper.

It does not blister or fill.

It can be treated exactly the same as ordinary albumenised paper and is a substitute for same.

It tones rapidly and in less than half the time than either, to any desired tone to purple or dead black.

It does not curl in drying.

It is the only paper that can be toned and fixed in a combined bath with absolutely certain good results.

It can be mounted very easily with any mountant and burnished like albumenised prints, but must not be squeezed and dried on glass.

It is considerably more permanent than any of the thickly coated high surface papers.

#### INSTRUCTIONS.

Treat the paper exactly the same as ordinary ready sensitised albumenised paper without the usual precautions to prevent blistering, or tone and fix in the combined bath without previous washing.

The combined toning and fixing bath is made up as follows:—

#### No. 1 Solution.

|                           |     |     |     |     |        |
|---------------------------|-----|-----|-----|-----|--------|
| Hyposulphite of soda      | ... | ... | ... | ... | 7 oz.  |
| Sulphocyanide of ammonium | ... | ... | ... | ... | 5 dr.  |
| Acetate of lead           | ... | ... | ... | ... | 2½ "   |
| Water                     | ... | ... | ... | ... | 25 oz. |

#### No. 2 Solution.

|                 |     |     |     |     |        |
|-----------------|-----|-----|-----|-----|--------|
| Alum            | ... | ... | ... | ... | 80 gr. |
| Citric acid...  | ... | ... | ... | ... | 80 "   |
| Nitrate of lead | ... | ... | ... | ... | 2½ dr. |
| Water           | ... | ... | ... | ... | 11 oz. |

Mix No. 1 and No. 2 together, put in about quarter sheet of sensitised paper cuttings, and let it stand for twenty-four hours, then filter and add slowly ½ oz. of 1 per cent. gold solution (one 15 gr. tube of gold in 3½ oz. of water).

The above quantity of toning bath will tone about twenty to twenty-four sheets of paper, but after ten to twelve sheets, 3½ oz. of hypo in 7 oz. of water must be added.

The prints should be placed direct into this bath without washing. After toning and fixing, wash in running water for half hour.

Platinum toning, such as recommended for other papers, also gives very fine results, but the prints must be rather overprinted.

The prints when thoroughly dry can be burnished or rolled, same as albumenised paper.

## Societies' Meetings.

**Camera Club.**—On Thursday, March 10th, Mr. A. Horsley Hinton read a paper entitled "Photographic Expression of Thought." Mr. F. Machell Smith presided. Previous to the paper Mr. Dallmeyer explained and exhibited a great improvement in his tele-photographic lens, which consisted of a different combination to be used in conjunction with portrait lenses. Some admirable results were exhibited, and much interest in the practical application of the instrument was displayed. Mr. Hinton, in his paper, maintained that, notwithstanding its limitations, photography was capable of expressing individual and personal ideas and feelings. For such facts he himself sought. In pictorial work he preferred to use focussing and printing methods that favoured breadth, and a general rather than a particularising effect.

**Derby.**—The usual meeting was held on the 8th inst., forty-five members and friends being present. Mr. A. R. Dresser very kindly sent for reading a lecture on "Brittany," illustrated by 200 lantern slides. The negatives from which the slides exhibited were photographed were all taken instantaneously with a camera held in the hand; the remarkable sharpness of outline, and detail of the originals, rendering the slides taken with them perfect pictures. Another fine series of slides by the same gentleman, animals, etc., taken at the "Zoo," were also exhibited, as also was a set showing a dog taken whilst jumping in mid-air, the meeting even as regards numbers being the most successful of the season. Altogether the society appears to be in a very flourishing condition.

**Dewsbury.**—On 10th inst. monthly meeting, Mr. A. S. Marriott, President, in the chair. A demonstration on "Lantern Slide Making," from book illustrations, was given by the Secretary, Mr. Geo. Kilburie, in place of Mr. S. Mitchell, who was unable to be present. The apparatus used consisted of a box fixed on to one end of a board, and a quarter-plate camera at the other end, and which could be easily adjusted to copy any size picture. At the back of the box an opening was made, and which could be altered to take various sizes of pictures. At the front of the box two Argand gas-burners were fixed for illuminating the pictures to be copied. Both the box and camera were made to slide backwards and forwards, thus making adjustment easy when different sizes had to be copied. An illustration was fixed on to the box, and the lights arranged, a plate was inserted in the camera, and an exposure of one minute given, a rectilinear lens with f/11 stop being used. On developing the plate, the exposure was found to be about right, a good negative resulting. The Secretary handed a number of negatives made with the same apparatus and same conditions, which elicited the praise of the members present. The lantern was next brought into service, when some slides made from the negatives shown were put on to the screen and gave great satisfaction. A number of slides by the President, showing the difference between coloured and uncoloured slides, were next shown, also other members' slides were shown. The prints contributed to the monthly competition were shown and voted upon. A number of shutters of different makes were exhibited.

**Dundee.**—The sixth general meeting was held on the 11th inst. Mr. J. D. Cox, President of the Society, presided, and there was a large attendance. After some routine business a lantern-slide competition among the members of the Society was entered upon. Eleven competitors took part in it, each of whom exhibited a set of six slides. With one or two exceptions, the views were of an exceptionally high standard. At the conclusion the results were declared as follows:—1st, Mr. J. D. Gibson; 2nd, Mr. J. R. Stewart; 3rd, Mr. V. C. Baird. The latter half of the evening was taken up with the exhibition of a large number of slides illustrating the uses of a hand-camera, which had been lent to the Association by Mr. A. R. Dresser, of London. The set included some remarkably fine sea subjects, taken chiefly on the South coast of England, and also some very pretty street views in Brittany and Holland.

**Durham.**—A well-attended meeting was held on the 9th inst., the President, Rev. H. E. Fox, M.A., in the chair. Mr. E. G. Lees, Hon. Secretary, Newcastle Photographic Association, gave demonstrations on the process of making lantern-slides by contact, and showing negatives most suitable for the purpose. Mr. Lees' method was new to most of the members, and was highly appreciated. Mr. J. Brown, of the same association, then proceeded to read his able paper on "Gelatin-Chloride," giving demonstrations with different toning baths, and passed round a large number of prints in the various stages of toning.

**Fairfield.**—A meeting was held on the 8th inst., the President, Mr. J. L. Mackrell, in the chair. After the election of new members, the Vice-President (Mr. H. J. Mallabar) gave a most interesting demonstration on "Alpha Paper," showing the diversity of tones and pleasing results obtained by this process, after which the President gave his demonstration on "Platinotype Hot Bath Process," showing the advantage gained by using a bath of comparatively

The North Middlesex Photographic Society held their third annual dinner on the 12th inst., at Beale's Restaurant, Holloway Road, the chair being taken by Mr. J. W. Marchant, President. After the toast of "The Queen," Mr. E. J. Wall proposed "The North Middlesex Photographic Society," and the President responded. Mr. Traill Taylor, Editor of the *British Journal of Photography*, replied for "The Press," and the toast of "The Officers, Council, and Secretary" was responded to by Mr. Walker and Mr. McIntosh. Vocal and instrumental music was given at intervals, and the social meeting did not disperse until a late hour.



low temperature, and his magnificent prints were ample proof of the capabilities of the process and his artistic skill. Mr. H. Holt's views of Ceylon were very much admired and appreciated. The Secretary distributed samples of the Eastman extra rapid bromide paper, kindly sent by the Company.

**Frome.**—On the 10th inst. a meeting was held. There was a good attendance. The Rev. H. B. Hare occupied the chair. It was announced that Miss Gertrude Cockey had gained the monthly prize offered by *Hearth and Home*, for a picture entitled "Yuletide." Miss Cockey was warmly congratulated on her success. The Rev. H. B. Hare had offered two prizes for the best view of an interior, to be competed for by the amateur members of the Club, and it was announced that Mr. E. Brightman (Bristol) had judged the pictures sent in, the result being that he had awarded Dr. Dalby's first and Mr. W. Cooper's second. Mr. Brightman read an interesting paper on "Lantern Slides, and How to Make Them." The paper dealt in an exhaustive manner with the different processes, etc., and was listened to with evident appreciation. He intimated at the outset that he would not pit one process against another, for it was essentially necessary that every photographer should adopt the one most useful to his object. There was no process of universal application, owing to the differences in the nature of the work. At the conclusion of a review of the various processes, Mr. Brightman exhibited a large number of pictures of various systems. The views were of magnificent bits of scenery; they were extremely well taken, and showed up very effectively on the sheet.

**Glasgow (High School).**—The Society met on the 8th inst., Mr. Muir (President) in the chair. Owing to the announcement that Mr. Jas. Laird, the Vice-President, would show the AMATEUR PHOTOGRAPHER 1891 Prize Slides, there was a large attendance of members and other gentlemen, who showed great satisfaction with the excellent quality of the slides. The limelight lantern was most ably worked by Mr. Weir, assisted by Mr. Turnbull.

**Huddersfield.**—A meeting was held on the 10th inst. Mr. H. T. Young presided, when a very interesting lecture was given by Mr. Herbert Haigh on "The Art Side of Photography" to a small but appreciative audience. The Secretary then exhibited a photograph of a film of ice which had been forwarded by Messrs. J. Martin and Co., of New Southgate, the beautiful leaf-like designs of which were much admired.

**Jersey.**—This society has now concluded all arrangements for its second annual exhibition on March 29th, 30th, and 31st. There will be a gold medal for the best photograph in the exhibition, and a silver and a bronze in each of the following classes: Landscapes, instantaneous, figure studies, enlargements, and slides. The awards are open to all amateurs in the Channel Islands. A gold, silver, and bronze medal will also be given to the three best scores obtained by members at the club excursions. The last day for receiving exhibits is March 26th at 21, Grove Place. Mr. A. Collenette, chemist, The Arcade, Guernsey, has kindly consented to act as agent for that island. The proceedings of the society during 1892 have included two lantern evenings and two ordinary meetings. On February 3rd the President, Captain Lamb, gave a discourse on the "Optical Lantern" and on "Slide Making." On March 2nd, as a departure from the formal reading of papers, the agenda was "Discussion and Mutual Help," each member being invited to bring forward any point of interest or to put questions on any matters of difficulty that occurred to him. The idea was apparently a happy one, for, with the exception of a brief description of the carbon process by the Secretary, the whole afternoon was given up to a lively and instructive discussion, the subject being "Hand-Cameras"—the lens and shutter to use, the best system of developing plates, and the respective merits of the various changing arrangements. The discussion was rendered doubly valuable to novices from the fact that the local dealer, Mr. De Faye, of David Place, lent specimens of the various hand-cameras for illustration.

**Liverpool.**—A meeting was held on the 9th inst., Dr. Webb in the chair—members' lantern slide evening—when about 170 slides were passed through the lantern, contributed by sixteen members. Messrs. Edwards and Stuart had charge of the lantern. Eight new members were admitted. Messrs. Sharp and Hitchmough exhibited their new Aptus copying camera and Aptus hand-camera, along with some novelties in albums, finders, etc. Some Eastman's bromide paper and pamphlets were distributed, as were a quantity of circulars and handbooks of the London Stereoscopic and Photographic Company. A library is to be established in connection with the club. The prize competitions for this year will include six medals as club prizes in three classes, and the special prizes given by members are distributed over five classes and include medals and utility prizes, such as a Thornton Pickard shutter, Wood's washer, Griffith's reducing camera, half-plates and lantern plates, etc. There is also a picnic prize, silver medal, for the best six pictures taken at the picnic to be held on Whit-Monday.

**Louth and District.**—A lantern exhibition was given on the 11th inst. Mrs. S. F. Clarke and Mr. Clarence James were in charge of

the lantern and slides. The Hon. Secretary, Mr. S. Francis Clarke, was the lecturer, and in his opening remarks explained that the entertainment would be divided into two parts; the first part being devoted to photographic views taken by the younger members of one season, the second to views taken by the senior members; and that they would commence with the slides of Mr. Ernest Keal and Mr. H. S. Forman, who had won the bronze medals that had been given by Mr. Mark Smith for the best works executed by junior members. Mr. Keal's two views of "Burwell Lake" and a third called "Lifting Timber" were clear with a good light. Mr. Forman's slides of "Windermere," "Douglas Harbour," and "Shine Your Boots" were also good. The following are the names of the exhibitors:—Juniors: Messrs. Ernest Keal, H. S. Forman, E. H. Forman, A. H. Hutchinson, V. T. Crow, H. C. Bentley, Col. Ranshaw, Capt. Fowler, Mrs. T. O. East, and Mrs. Clarence James. Seniors: Rev. J. M. Coates, Messrs. O. Burdett, C. James, S. F. Clarke, and Mrs. S. F. Clarke.

**Midland.**—On the 4th inst. there was a large attendance at the general meeting, the President, Dr. Hall Edwards, in the chair. Two new members were elected. Several members showed their prints upon the Eastman rapid bromide paper; Mrs. Welford, a negative just taken from a paper bag (where it had been two years), utterly spoiled by the paper; also a very neat leather camera case by Levy; Dr. Nichol, an enlargement from a quarter-plate on Ilford rapid paper. Dr. W. W. J. Nichol then proceeded with his lecture, and demonstration on his "Kallitype." He traced the history of "iron" printing from 1840, up to his latest development of his "Kallitype" process, explaining how various colours were produced, concluding by developing several prints he had made that day. In response to questions from the President and members, Dr. Nichol stated that the Kallitype paper kept well, that it was more sensitive than silver paper, that it was cheap, and easy to use compared with bromide or platinotype. Professor Allen spoke most highly of Kallitype paper.

**Newport.**—The first annual meeting was held on the 7th inst., the occasion also being made that of a social gathering of members and gentlemen friends. Alderman George H. Llewellyn presided during the business part of the evening. The balance-sheet prepared by the Hon. Treasurer showed a deficit of a few pounds, the outcome of a heavy loss on the second public lecture. From the Council's annual report for the year, it appears that the Club has a membership of nearly seventy. The executive for the year were elected as follows:—President, Mr. E. H. Watts, jun., F.R.G.S.; Vice-Presidents, Archdeacon Bruce, M.A., F.R.A.S., and Alderman Geo. H. Llewellyn; Hon. Treasurer, Mr. E. J. Smith; Hon. Secretaries, Messrs. F. Parsons and H. E. Lewis; Council, Messrs. P. A. F. Villiers, W. J. Charles, L. Lockyear, W. H. Manhire, E. Clyde Lewis, T. A. Grove, John Thomas, and Vivian H. Fudge; Curator, J. Watkins.

**Paisley.**—A special meeting was called on the 9th inst. for the purpose of exhibiting to members and friends the 1891 Prize Slides of the AMATEUR PHOTOGRAPHER. There was a very large attendance. Mr. Morrison, President of the Society, in a brief speech, made reference to the object the Editor of the popular AMATEUR PHOTOGRAPHER had in getting together, at considerable trouble and expense, a set of lantern-slides for the purpose of loaning them out to the various societies throughout the United Kingdom. The views were then thrown on the screen by the aid of the oxy hydrogen light, and from beginning to end they were pronounced "first-class," and the finest set that had been seen for some time. Those by Mr. Austin seemed specially to interest the audience, and a request to throw them on the screen a second time, after the rest had been put through, was acceded to.

**Richmond.**—A meeting was held on the 11th inst. Two subjects had been announced—"Toning with Salts of Platinum," by Mr. Ardaseer, and a demonstration by the Incandescent Gas Light Company. Mr. Ardaseer was unfortunately prevented by indisposition from giving his paper. Mr. Clark, of the Incandescent Company, read a paper explaining clearly the principles and advantages of the Welsbach system, and its application to ordinary house gas and oil gas. The apparatus for producing the latter from spirit of paraffin was exhibited and explained, and some lantern slides were afterwards shown by the aid of the light, which, though of course much inferior in power to the oxy-hydrogen light, was seen to be greatly superior to the oil-lamp in point of whiteness of light and evenness of illumination.

**Selby.**—A meeting was held on the 10th inst., Mr. J. C. Thompson, Vice-President, in the chair. Mr. Thompson read a paper on "Photo-mechanical Work," in which he described the various processes of preparing photographic negatives, for book printing, etc. It was decided to have a public photographic exhibition, on Thursday, April 21st, to comprise pictures, apparatus, etc., also demonstrations of processes, flashlight experiments, slide making, etc., and lantern slide displays.

**South London.**—Ordinary meeting 7th inst., the President (Mr. F. W. Edwards) in the chair. Messrs. Hurter and Driffield's actino-



graph was passed round for inspection by the members present, and its action discussed. Mr. J. Burgess then proceeded to read his paper on "The History of Gelatino-bromide Photography." After a humorous description of his early experiences as an amateur thirty-four years ago, he said he took up photography in connection with his business, and commenced to read the photographic journals in 1873. They were then full of collodion emulsions and dry plates. Seeing the reason why a wet-collodion plate was quicker than a dry one was that dry collodion was impervious to moisture, and that it was necessary to develop with a substance soluble in water, in order that the developer might act, he thought of gelatine, the journals at that time saying nothing about the investigations of Harrison and Maddox. His first experiment was very much like Harrison's. The reason why all who had tried gelatine before had failed was because they neglected washing the plates. No plate could work satisfactorily unless the nitrate of potash formed when nitrate of silver is added to bromide of potash is washed away. Finding the washing of plates very troublesome, he resolved to wash the emulsion, and did this successfully by means of a bag of boulder, or coarse canvas, used for wool work, and thus succeeded in getting what every dry-plate worker sighed for. This emulsion he sold at 3s. a bottle, and offered to divulge his method to 500 subscribers of £1 1s. His first batch of emulsions was an immense success, but the weather setting in abnormally hot it decomposed. He then commenced plate-making, his want of success in which he attributed to their not being so quick as others. During his lecture Mr. Burgess handed round some plates made in accordance with Sutton or Gaudin's process, and explained their shortcomings. The lecturer read a communication from Dr. Maddox, which appeared in the *British Journal of Photography* of 8th September, 1871, laying stress on the statements contained in it, that the process was not for a moment supposed to be new, and that it was a printing process. Plates were handed round, made in accordance with Dr. Maddox's formula, one unexposed, and two exposed on a plaster cast, with a piece of black velvet hanging behind. With one, using a medium stop, and exposing for an hour, he got no result, and with the other, exposing the same time without any stop, he only got a faint image. A discussion followed, in which the President, Mr. Faulkner, Mr. Maurice Howell, and others took part.

**Stockton.**—The ordinary meeting was held on the 8th inst., when Mr. H. Macdonnell presided over a good attendance of members. After the usual business, the Hon. Secretary (Mr. J. E. Ellam) gave a film enlarging demonstration, using the new solution "Cresco Fylma," and very successfully enlarged both negatives and transparencies to the satisfaction of those present, who watched the proceedings with intense interest.

**Tooting.**—The annual meeting was held on the 10th inst., report from Secretary was read, and balance sheet, showing a fair amount in hand, was submitted and approved. The election of officers for ensuing year was then proceeded with, and the following were re-elected, viz.:—Mr. A. H. Anderson, President; Mr. J. H. Beckett, Vice-President; Mr. C. E. Stowell, Treasurer; Mr. G. Dollery (Gilon, Lucien Road, Tooting Common), Secretary; and Messrs. H. Berger, J. F. Child, and W. Irwin, Committeemen. A vacancy in the committee was filled by the election of Mr. J. H. Collingwood. A communication was read from the Hon. Sec. of the Brixton and Clapham Camera Club with reference to a proposed joint exhibition by the societies in South London, and a sub-committee was appointed to deal with the matter. It was agreed to commence the season's outings by an all-day visit to Rochester on April 9th. Several alterations were made in the rules, and the amount of the annual subscription altered.

**Tunbridge Wells.**—An ordinary meeting was held on the 10th inst., Mr. B. Whitrow, Hon. Treasurer, in the chair, when Mr. Guggenheim gave a demonstration on retouching. He commenced with a description of the material required. The regular form of retouching desk was not recommended, a simple and practical desk of home manufacture being shown; he described the measurements to be taken to suit the worker, Autotype medium, and H. H., and H. H. pencils, accompanied by patience and perseverance completing the requirements. The main principle was impressed that the quantity of lead put on a negative does not necessarily imply artistic work, the best result with the least lead showing increased skill in the art. Mr. Guggenheim illustrated the method of retouching by means of negatives thrown on a sheet of cartridge paper by the oxy-hydrogen light, and working with a stick of charcoal, showed the methods adopted by various professional retouchers in obtaining an elaborate effect, as well as giving hints on the modelling of a flatly-lighted face, an over-exposed negative of a copy being used for the purpose. The demonstration concluded with the passing through the lantern of several fully retouched negatives, after which the lecturer was besieged with questions on points which presented difficulties to the members. Mr. Cassingham most ably manipulated his lantern, and after the demonstration he passed

through a set of twenty slides illustrating "The Wreck of the 'Eider,'" showing the lifeboats at work, and various scenes connected with the wreck, a group of the crew of the lifeboat "Catherine Swift" (who saved 170 lives, and landed 500 bags of mails), also a portrait of Mr. R. Cotton, coxswain of the boat, taken after twenty-four journeys, wearing cork jacket and silver medal; these had been taken by Mr. Knight, of Newport, Isle of Wight. "The Lion of Lucerne" was also thrown on the screen.

**West London.**—The ordinary meeting was held on the 11th inst., the President in the chair. Mr. Howson explained the new Ilford Isochromatic plate, and performed experiments demonstrating the advantage of colour-sensitive plates over ordinary ones for a great variety of subjects. He also described the new Ilford screen, consisting of a metal framework which could be easily fixed on the inside of the camera front and the screen inserted in a moment, or taken out as quickly when an ordinary plate is to be used. He mentioned in the majority of cases a light tinted screen was required; at sunset, sunrise, or in hazy weather it was not so much needed, because the atmosphere presented really a screen by itself and there was no excess of blue light to modify, but that for ordinary landscape work a screen was always more or less an advantage. He adverted to the necessity for having the screens perfectly optically ground to prevent distortion, and said that they must be tested by the spectroscope, as it was probable, if these precautions were not taken, they might get a screen that did more harm than good; also that care should be taken not to use too deep a tint of glass, or over-correction might result. In answer to questions, Mr. Howson stated that their Isochromatic plates were made under a license from Mr. Edwards, that there was a distinct advantage in using them over ordinary plates in regard to halation, although he did not profess it could be got rid of altogether; and replying to a question by Mr. Whiting as to whether there was not a disadvantage in taking landscapes when the effect of atmosphere and distance was required, and whether Isochromatic plates did not penetrate through the haze and give too sharp an image, he stated in his opinion that an ordinary plate sometimes gave too great a mistiness in the distance and did not render the values correctly. Mr. Whiting thought using coloured screens shortened the focus of the lens, but Mr. Howson said, if properly ground, he was under the impression that it was not so, and Mr. Rogers thought perhaps the solution was that the yellow rays had a different focus to the white rays. Mr. Hodges mentioned the fact that Isochromatic plates had a tendency to give undue density unless the exposure were ample. The President announced that Mr. Colls had presented a silver medal for the best picture taken during the ensuing summer excursions.

**York.**—On the 8th inst. the evening was devoted to practical development, Messrs. Swailes and Vincent first showing the development and fixing of a lantern plate on the screen by means of a powerful lantern. Afterwards lantern plates were developed by Mr. Vincent, using eikonogen, and Messrs. Tittensor, Hick, and Dickinson, using hydroquinone. The Eastman Company kindly sent sample packets of their new rapid bromide paper for distribution. The Hon. Secretary developed two or three pieces with eikonogen, pleasing results being obtained. He also showed some developed with ferrous oxalate. A new member was admitted.

### SOCIETIES' FIXTURES.

- March 17.—**BRIXTON AND CLAPHAM.**—Annual general meeting. "A Demonstration of Collodio-Bromide," by F. Goldby.  
 „ 18.—**RICHMOND.**—“Home Portraiture,” by A. C. Hunter.  
 „ 18.—**BRISTOL.**—“Carbon Printing,” by Mr. Holmes.  
 „ 18.—**ISLE OF THANET.**  
 „ 18.—**WEST LONDON.**—Technical social evening.  
 „ 18.—**LEWISHAM.**—“Photography with an Object,” by A. H. Miles.  
 „ 18.—**HOLBORN.**—Monthly competition slides.  
 „ 21.—**LEEDS.**—“The New Platinum Quick Printing,” by T. W. Thornton.  
 „ 21.—**NEWCASTLE.**—Exhibition of prize slides.  
 „ 22.—**GLASGOW HIGH SCHOOL.**—“Photographic Printing Methods,” by Mr. Weir.  
 „ 22.—**P. S. G. B.**—Exhibition of old silver prints. “Tele-photographic Lens,” by T. R. Dallmeyer. “Copying Inclined Pictures,” by Mr. Chapman.  
 „ 23.—**BIRMINGHAM.**—“Lantern evening.”  
 „ 23.—**CLEVELAND.**—“Lantern-slide Making.”  
 „ 23.—**BIRMINGHAM.**—Lantern display by J. T. Mousley.  
 „ 24.—**LONDON AND PROVINCIAL.**—“Continental Photographic Establishments,” by W. H. Harrison.  
 „ 24.—**HACKNEY.**—“Egypt and the Pharaohs,” by Dr. G. Smith.  
 „ 24.—**HUDDERSFIELD.**—“Amateur Photography.”  
 „ 25.—**CROYDON.**



## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

5514. **Glazing Prints.**—Would any reader kindly tell me of a method for producing a good glaze on prints made on the Ilford printing-out paper without any risk of tearing or otherwise damaging them?—H. H. COBB.

5515. **Rolling Press.**—By putting a straight edge on the face of the plate, across or lengthways, I find it an eighth of an inch out of its level in the centre. As the plate passes between the rollers the cabinets only get pressed at their edges and cartes pass clear through. Could any kind reader give me some scheme to get over this trouble? A friend tells me it is quite useless getting it put to its proper shape, as it will soon get like it again.—H. STREL.

5516. **Intensifier.**—Please state how the uranium intensifier is made, or is, it or the sulphate of copper, the best?—PYRO.

5517. **Taking Group.**—Will anyone kindly tell me how to focus a group so that every face is distinct? In quite a small group I took, one person was distinct and the rest "fuzzy." I used stop 11/3 (iris diaphragm) open air exposure.—JINGO.

5518. **Masking Screen.**—Can any reader give me instructions how to make a lantern screen?—H. BRAITHWAITE.

5519. **Red Ferro-Prussiate Prints.**—Can any of your readers give me details of the process which Mr. Tomlinson suggests on page 599 of the "British Journal Photographic Almanac" for this year, by which the blue prussiate process can be made to give red prints? Are they immersed in the nitrate solution after or before being fixed in water, and for what time, and in solution of what strength?—FERRO.

5520. **Tylar's Metal Dark Slides.**—Will any reader who has used these slides kindly inform me of the objections (if any) to them? I want to use them with a half-plate Instantograph.—J. E. HODD.

5521. **The Studio.**—I want to know the length, height, breadth of a studio for a whole-plate camera, and also the width of glass, and how to fix in best position, and also the best book on the studio.—ELKINGTON.

5522. **Reducer.**—With reference to my question, No. 5493, would Mr. Bennett kindly supplement his answer? I intensified with mercury and sulphite of soda, and want a reducer that will act on the negatives without blurring them all over with a white film, as the Platino Company's reducer does.—ASHTON.

5523. **Spotting Out.**—What is the best thing to use for spotting out white dots in lantern slides, made on ordinary commercial plates?—J. D. P.

5524. **Detective Lens.**—Can any reader inform me where I can obtain the best R. K. lens for a hand-camera, 4½ in. focus, which will cover a quarter-plate sharply to the corners, for all objects beyond about 12 ft? Cost not to exceed £2.—BELLGRAVE.

5525. **Dark-room Lamp.**—Will any reader kindly inform me of a good lamp for dark-room? I have one with circular ruby chimney, but it does not give a good light, and, if turned up, is liable to crack the glass.—CARLOS.

5526. **Distilling.**—I shall be glad to hear if any amateur photographers make their own distilled water, and if they pay the license for a still. I have recently purchased one, but am informed that it is illegal to have it in my possession without paying 10s. per year.—E. B.

5527. **Silver Ring Rectigraph.**—Is Lancaster's rapid Silver Ring rectigraph lens suitable for taking portraits, or is the Optimus Euryscope the best of the two for the above purpose?—I. C. K.

5528. **Mountant.**—Can any reader of the AMATEUR PHOTOGRAPHER inform me of a receipt for making a good mounting solution?—J. K. W.

5529. **Mounting Enamelled Prints.**—Will some one tell me how to mount prints which have been

squeezed on to glass so as to retain the high finish?—TIM.

5530. **Cement in Lens.**—The cement in the front combination of my portrait lens has run a little round the edges, and seems to be spreading towards the centre. Will some one kindly tell me if I can remove this, or where I can get it done?—TIM.

5531. **Copying Photograph on Glass.**—I want to copy a photograph on glass. Can I get the black varnish off the back and print from it, or enlarge in the usual way? I have tried to copy in the usual way, but cannot get a good negative. Any hints will oblige.—TIM.

5532. **Opals.**—Will some one kindly give me a formula for sensitising opals?—CAP.

5533. **Sensitised Paper.**—Will some one please give me a formula for making the above?—CAP.

5534. **Photograph on Silk.**—Have heard this can be done; should like to know how to proceed.—WILLIE.

5535. **Enlarging.**—Could any one say if enlargements could be made by placing negatives in the focussing screen of camera, throwing beam from lime-light lantern on same, and, after cutting off all light from going past the camera, produce enlargements on a flat board at right angles to axes of lens at the required distance from same?—B. B.

5536. **Enlarging.**—Could some one tell me if I could make an enlargement from a carte-de-visite by putting a double convex lens in front of ordinary rectigraph lens?—WILLIE.

5537. **Toning.**—I should be glad if any reader could give me a formula for Ilford printing-out paper that will give a dark tone, the same as photographers get.—PUZZLED.

5538. **Magnesium Ribbon.**—Can any one tell me how much magnesium ribbon for a portrait to use with Lancaster's Instantograph?—PUZZLED.

## QUERIES UNANSWERED.

Feb. 19.—Nos. 5445.

" 26.—Nos. 5476, 5481, 5482.

Mar. 4.—Nos. 5489, 5492, 5495, 5501.

" 11.—No. 5508.

## ANSWERS.

5483. **Stereoscopic Camera.**—As "R. E. A." only received a negative reply to his query, and as what he asks is quite possible, perhaps I may send a reply, even though late. I must apologise for long delay in replying, which arose through my not having observed the original query, and upon reading reply in AMATEUR PHOTOGRAPHER, March 4th, I assumed it to refer to quarter-plate Instantograph, which can also be converted into stereoscopic camera by a method which I hope to describe fully, ere long, in an article for AMATEUR PHOTOGRAPHER, if the Editor will accept it. As regards half-plate Instantograph, or any other half-plate camera with sliding front, all that is necessary is to remove the front and replace by one which can be made out of a cigar box, on which are mounted two quarter-plate lenses. Lancaster's ordinary Meritoto lenses would be cheapest, but Instantographs would be better, taking care they are exactly same focus, and placing inside camera a diaphragm of black twill, or better, india-rubber attached at one end by elastic to a point midway between the lenses, and at the back to two tiny hooks at top and bottom of inside of frame. The two pictures can be taken on half-plate, and when printed, ½ in. masked off at top and bottom, or, if it suits the pictures better, more off the foreground and less off the sky so as to print ⅔ in. by 3½. The two pictures must be cut and transposed in mounting.—W. A. W.

5458. **Correct Exposure.**—Wormald's tables have been of great service to me, and are just right for Ilford Ordinary plates. In the first case "Pallas" gives 1 should say he would be about right in his exposure, but the trees in the second case would require 3 sec. at least, but I should personally use f/16, unless they were very near, so as not to get any movement of the leaves at all prominent. For interiors, multiply Wormald by 100—300; not by 25, as he recommends.—E. A. H.

5473. **Film Varnish.**—The varnish you mention is new to me, but if it answers for plates it should also be suitable for films, provided you can overcome the difficulty of applying it. There is nothing in the formula you give to injure celluloid.—THE SMITH.

5474. **Nickel-plated Screws, etc.**—I think Lonsdale Bros., Cookridge Street, Leeds, would supply you.—THE SMITH.

5478. **Paper.**—Coat the back of the negative with matt varnish instead of using paper. It will take pencil easily. Do not print in direct sunlight.—THE SMITH.

5485. **Developing.**—Interiors are hard things to take, and still harder to develop. When there happens to be a window which comes in the centre of the plate, you are bound to over-expose it, whilst perhaps you cannot get enough detail in the body of the church. This has always been the difficulty with interiors, even when the plates have been backed, unless the church happens to be very light, when a short exposure would only be necessary, thereby increasing the chances of a good negative. The only way is to try a little "dodging" during development or to block

out the window when the negative is finished. Use a developer of moderate strength, and when you see the high lights appear, paint them with the restrainer, also remove plate from the dish and well wash that part only. Then flood the developer on the part you wish most to be brought out until it grows stronger, then let the developer flow evenly over the plate. Keep on dodging in this manner until you think the negative sufficiently developed. I can strongly recommend this method, as I have tried it myself with very satisfactory results.—ZEBRA.

5486. **Shutter.**—The illumination of the plate would not be even in the case you mention, as the centre would receive at least three or four times more light than the corners. The proper place for a shutter working from and to the centre is certainly between the combinations. A shutter with a single blind travelling straight across the aperture is much to be preferred for working either before or behind the lens.—THE SMITH.

5487. **Opalines.**—The "Kernel" says, "For opalines, the struts should be attached to the back of the print with thin hot glue."—E. A. H.

5487. **Opalines.**—Cover the back with a solution of Gelatine (Nelson's X opaque) .. .. 1 oz.  
Water .. .. 4 "  
Glycerine .. .. 2 "

Soak the gelatine in water and dissolve by the aid of heat, add the glycerine last. The opals will adhere to this on being damped. (Wall's "Dictionary.")—CYANIN.

5490. **Developers.**—The Paget Prize Plate Company's 10 per cent. stock solutions are made up as follows:—

No. 1, Pyro.

Pyrogalllic acid .. .. 1 oz.  
Sodium sulphite .. .. 2½ "  
Citric acid .. .. 60 gr.  
Distilled water, to make .. .. 9 oz. 55 min.

No. 2, Bromide.

Ammonium bromide .. .. 1 oz.  
Distilled water, to make .. .. 9 oz. 55 min.

No. 3, Ammonia.

Liquid ammonia .880 .. .. 1 oz.  
Distilled water, to make .. .. 10 oz.

Thomas's is nearly identical, but he uses potassium bromide.—E. A. H.

5497. **Glazing Bromides.**—Probably Eastman's instructions would answer with Ilford paper, viz., "Squeegee the wet print, face down, on a polished sheet of hard rubber or ebonite. When dry, the print will peel off with a fine polished surface. The print should be slipped on to the rubber plate under water."—E. H. H.

5499. **Backing Paper.**—Wheeler's Anti-halation paper can be obtained almost anywhere; if not, send to Wheeler and Co., 46, King Street West, Manchester. It need not be removed before developing.—E. A. H.

5500. **Bromide Emulsion.**—"Romide" had better purchase Abney's "Photography with Emulsions." The points to be observed in emulsion making are too many to deal with through this column.—CYANIN.

5502. **Metal Grooving.**—Write to Sharp and Hitchinough, Dale Street, Liverpool.—THE SMITH.

5503. **Mawson Plate.**—The Mawson plate is a terribly fast one. Watkins puts it as the fastest in his tables, values it at 65, i.e., four times as fast as Ilford Ordinary. Lancaster's Rectigraph would require to be stopped down to f/40 for outdoor portrait or near building before the hand could be used, as even with that it would be half a second. This is supposing the sun were shining at midday in June.—E. A. H.

5504. **Lens.**—If 3½ in. would be short enough focus, you cannot do better than obtain one of Wray's new hand-camera lenses. They can be thoroughly relied on to do all you state, and the price is very low considering their quality. I can heartily recommend the series from experience.—THE SMITH.

5505. **Single Lens.**—A Beck 8½ in. or Wray 7½ in. would be suitable, and both makes are first class. The lens mentioned in my answer above (5504) with back combination alone makes a very good single lens of about 7 in. focus.—THE SMITH.

5506. **Silver Prints.**—The yellowness of the whites in your prints is due, most probably, either to imperfect washing, imperfect fixing, or to the use of old sensitised paper.—W. R. P.

5506. **Silver Prints Yellowing.**—They are either insufficiently fixed or impure mountant has been used, or possibly they are exposed to an impure atmosphere. Use a stronger fixing bath, and wash thoroughly.—R. A. R. BENNETT.

5507. **Sensitometer Number.**—Vial's exposure tables are compiled for the use of 30-times plates, and are therefore ready calculated for Ilford ordinary plates (30-times) with little or no variations. I take it there have been two different methods of registering and recording the meter number. If the inquirer, however, is not quite clear on these points, if he will repeat the particular queries he is doubtful upon, I will do all in my power to assist him.—CYANIN.

5509. **Griffith's Camera.**—I can highly recommend the above for lantern-slide making, by reduction, preferably by daylight. For use with artificial light use magnesium ribbon, and place a sheet of ground-glass between the light and negative, also be careful to continually move the light over the whole surface of the ground-glass during the exposure, or you will not get an evenly exposed slide.—S. C. B. (Genoa).



**5510. How to Make a Negative from a Silver Print.**—Simply mount the print and photograph it the same size in the usual way. If properly done, a print from the negative thus produced will be nearly as good as the original print.—R. A. R. BENNETT.

**5510. How to Make a Negative from Silver Print.**—Squeeze the print, if not mounted, in optical contact with a piece of glass, place the vertically near a window so that light may fall upon it sideways, at an angle of about 77 deg., and arrange a mirror on that side of the print which is away from the window, so as to reflect the light upon the print; then copy in camera.—W. R. P.

**5510. How to Make a Negative from Silver Print.**—Yes, you can either print by contact or "copy." The former would be the easiest. Give an exposure of about 3 sec., 2 in. away from a gas burner, with an ordinary plate.—ZEBRA.

**5511. Underwood's Camera.**—I have used one of Underwood's Rectilinear Exhibition Cameras for some time, and can thoroughly recommend it.—H. BATHWAITE.

**5512. Fixing.**—Develop longer, and thereby gain greater density. Take into consideration, when you examine your plates by transmitted light to see if they are dense enough, that they have a coating of unacted upon silver film, which, when dissolved out in the fixing bath, makes the plates look considerably thinner.—B. SMART.

**5512. Fixing.**—Perhaps you do not develop sufficiently. This matter is very deceiving. Sometimes the image will appear to be fully brought out, but when transferred to hypo bath will (as in your case) almost disappear. Try developing until you can see the image through the back of the plate. Moreover, your fixing bath is slightly too strong; 2 oz. of hypo in a pint of water is about my average.—ZEBRA.

**5512. Fixing.**—You must remember that hypo has a tendency to reduce the density of the negative, and as a remedy  $\frac{1}{2}$  dr. of ammonia to every pint should be added to the fixing bath. Your fading most probably results from insufficient fixing. After the removal from the fixing bath, wash in several changes of water in subdued light, as the hyposulphite of silver in the film is sensitive to light, therefore do not fix in open daylight. Toning bath:—

|                       |        |
|-----------------------|--------|
| Borax .. .. .         | 60 gr. |
| Gold chloride .. .. . | 1 "    |
| Water .. .. .         | 8 oz.  |

—CYANIN.

**5512. Fixing.**—What do you mean by "fading"? Probably you mean that they become too weak in the fixing bath. If so, the remedy is to develop a longer time, and so obtain a deeper negative. You must go on developing some time after all the picture is put.—R. A. R. BENNETT.

**5513. Speed of Plates.**—You will, I believe, be pretty right if you take Ilford ordinary as 9 $\frac{1}{2}$ , and Thomas' E. R. as 15, on Hurter and Driffield's actinograph scale. 1 make Paget 50 times to be 30, and Edwards' Isochromatic instantaneous 30 to 35 on the same scale. I shall be glad to be corroborated or corrected.—CLIFFORD E. F. NASH.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED : AM: PHOT:

R. H. MERRER.—We have lately seen the camera and work done by it, and were perfectly satisfied it could turn out good work.

S. DE MORGAN.—If the focus of the R.R. is 5 $\frac{1}{2}$ , the f/10 stop should be 21-40ths, or practically  $\frac{1}{2}$  in. in diameter;  $\frac{3}{4}$  in. diameter would be f/7. Is not your calculation of the focus wrong? If you like to send us up the lens, we will test it for you.

INQUIRER.—Wilkinson's "Photo-Engraving, Photo-Litho, etc.," 5s., to be had from our publishers, is the best work.

LUX.—On asking the judges for a reason for their silence, we find that your print was accidentally overlooked, but it came in the first twelve, and "was a little too formal in composition to go higher."

C. PRIER.—The critique on your print was written by one of the judges, and although a little rough was probably deserved. We have, however, taken the trouble to find your print, and now calmly criticise the same. It is flat, over-exposed, has no pure whites in it, and shows hubble marks, and a dirty finger mark in the corner; there is absolutely no detail in the dark portions. Evidently you feel very much hurt and aggrieved, but surely unnecessarily. None are more pleased to see good work than we are; when it is bad, then we apply the whip in the hope of an improvement.

NOVICE.—Transparencies are by no means difficult to make. Edwards, Fry, Ilford, Mawson, Verol, Thomas, all have lantern plates on the market, and all give formulae and instructions, and as the instructions will apply to the production of larger transparencies on the same kind of plate in larger sizes,

your best plan will be to buy a box and set to work. Then when troubles commence, apply to us.

H. A. C.—Use an Isochromatic medium rapidity plate, stop down to f/22, and use a yellow screen and give about a quarter to one-tenth of a second. In developing keep the negative rather thin. To print, cover in the landscape part of print with a mask or a wash of gamoge and sepia, and then print in.

W. E.—(1) The hood of the lens is not essential, and is only used to protect it a little from stray light, it will work as well without. (2) 1 oz. of hypo will certainly fix a sheet of paper, but it is never advisable to use as little as is possible; the more hypo, in reason, the more perfect the fixing, and the more permanent the prints. The only way to test is to hold them up to the light, and see if they look clear or not; to test chemically is not practical.

J. FORREST, JUN.—It is advisable to use the acid fixing bath for hydrokinone-developed bromide prints. We should like to see the prints before answering definitely.

SEP.—Probably your plate would be hopelessly fogged under the conditions named.

H. HOLZ.—Your two prints are being used for reproduction purposes.

W. L. NOVERRE.—We may carry out your suggestion in the early summer; we have too much in hand at present.

J. E. HOOD.—The camera is intended to enlarge from quarter to whole-plate, probably your lens is of too long a focus; this is the only suggestion we can make. A slow lantern emulsion is the only one to use for enlarged negatives.

FOLIAGE.—(1) We cannot answer definitely without seeing the negative, but they sound like silver stains from damp—if you send negative we can tell you. (2) Soak the negative in water, and then in the acid fixing bath.

CELLULOID.—Our experience is that the film is strained sufficiently tight not to interfere in any way with the focus.

F. LESLIE.—Postcard received, and request duly noted. We never furnish addresses to anyone.

J. STEWART CLARKE.—Letter by post.

H. S. W.—(1) If you want the English book, our publishers will supply—if the German, write to Dr. Just, Vienna. Will not our leaders help you? They will presently treat of this subject. (2) The only difference between a candle and lamp is in the length of exposure. (3) Yes, eikonogen gives blacker tones.

J. A. T.—The camera you name is an excellent instrument.

E. D.—"The Practical Ferrotypist," by H. Snowden Ward, price 6d., post free 7d., from our publishers.

J. N. K.—We certainly prefer No. 2, as the more generally all-round useful camera. The slides are perfectly light-tight.

W. T. TUCKER.—All addresses should be on the entry forms. We evidently cannot please all, but we do try, and if we have failed in your case we are sorry.

BRASSEUR.—We are pleased to fall in with your suggestion; see head of Sale and Exchange column for rules.

E. SMITH.—Many thanks for your valuable help to our readers. You forgot the presence of the hyposulphite. Nitrate of potash and powdered charcoal are the proper fluxes for reducing. Adding liver of sulphur or sulphide of ammonium will precipitate the silver as sulphide. Heating the old fixing baths with old ferrous oxalate developer precipitates metallic silver.

BENZ.—Probably your negatives are flat; if so, intensify—or print under green glass, or else do not expose the paper so long, and use a colder developer.

W. R. P.—When the houses are built up you need only use a reflector, and the difficulty is got over.

NOVIATIE.—Letter by post.

PLATINO.—Possibly your friend may be right, but you will allow us to differ from him and you in this opinion. If you require a lens of 6 in. focus to cover a 5 by 4, there is no earthly reason why you should choose a wide-angle type working at f/16, when you can obtain an R.R. working at f/8, or a single landscape lens working at f/11. We have tried all the lenses you name in your letter, but do not intend to pick one out, because we think you have started on a wrong basis altogether. For outdoor work we should certainly say get a single lens, and if you choose a W. A. B. you will sooner or later find out that you will want a larger aperture, and grumble, and then blame us as well as yourself. If you will write to us privately, we will write in return.

H. T. C.—(1) We should say go in for A lens, or else one of the new Zeiss Anastigmat, Series iii., No. 6, of 9 $\frac{1}{2}$  in. focus, at £9. The D camera is perfectly satisfactory, though not quite so high a finish as C, still finish does not count for much in practical work.

J. WATERS.—Possibly the critic made a mistake, but one print, certainly we thought yours, was brush worked.

AMATEUR.—(1) The idea is, we believe, that these plates are far more liable to fog with ammonia than with a fixed alkali. (2) Yes, the emulsion is said to be prepared in the same way. (3) No such view meters are made by any firm, though probably Tylar would make you one.

TYRO.—The red-hot stove certainly would not fog plates.

TOOTLES.—Whilst your print may have been what was stated, it does not necessarily follow that it was the most artistic.

H. WATSON.—Please let us know from whom you received the reply given in your letter, as we like to know the sharps—being flats ourselves.

W. B. SMART.—(1) The nearest point in focus depends entirely upon the aperture and the disc of confusion permitted, the following formula will give you what you want:—

Let  $f$  = equiv. focus.

$a$  = the diameter of aperture.

$e$  = the greatest allowable error.

then  $d$  = the distance of an object upon which, if the lens be sharply focussed, all objects beyond  $d/2$  will be in apparent sharpness: assuming 1-250th of an inch as the greatest allowable error, the nearest point in focus will be 34 ft. with f/8; allowing 1-150th of an inch, the nearest point will be 23 ft.; and allowing 1-100th of an inch, the nearest point will be 16 ft. You would find full information on this point in the AMATEUR PHOTOGRAPHER for Nov. 27th, 1891, p. 394. (2) We cannot definitely state when the book will be ready.

E. S. BIRD.—(1) It is always advisable to commence development with half the normal accelerator, and an extra amount of water may be added without any harm accruing to the resulting negative. Of course, the actually correct way would be to increase the pyro solution. (2) Possibly your fault lies in the fixing. It is essential to fix well and long, and wash well and not too long; placing the prints in a dish and changing the water every five minutes, is the best plan, unless you use a washer, and the changing should be kept up for at least two or three hours.

SELAS.—We see no objection to your competing now.

F. GEE.—You cannot obtain better lenses anywhere, and the one you state would be the best to use for half-plate.

W. A. WATSON.—Your error was using too much bromide. Cut this down to 1 gr., and try again.

C. H.—To Poitevin belongs the credit of the black line process. He used ferric chloride and uranium nitrate, and after exposure blackened with tannin, gallic, or pyrogallie acid. In 1880 "Riegel" gave his process, which consisted of coating paper with

|                         |              |
|-------------------------|--------------|
| Ferric sulphate .. .. . | 10 grm.      |
| Ferric chloride .. .. . | 20 "         |
| Gelatine .. .. .        | 10 grm.      |
| Tartaric acid .. .. .   | 10 "         |
| Water .. .. .           | to 350 c.cm. |

The print was developed on a weak alcoholic solution of gallic acid. In 1883 Colas introduced his paper, which is said to be prepared with

|                                  |           |
|----------------------------------|-----------|
| Water .. .. .                    | 300 c.cm. |
| White gelatine .. .. .           | 10 grm.   |
| Ferric chloride (erypyr) .. .. . | 20 "      |
| Tartaric acid .. .. .            | 10 "      |
| Ferric sulphate .. .. .          | 10 "      |

After exposure it is treated with a solution of

|                     |             |
|---------------------|-------------|
| Gallic acid .. .. . | 7.5 grm.    |
| Water .. .. .       | 1,000 c.cm. |

In 1885 Shawcross and Thompson took out a patent for a paper treated with

|                         |             |
|-------------------------|-------------|
| Gelatine .. .. .        | 1,500 grm.  |
| Ferric sulphate .. .. . | 600 "       |
| Salt .. .. .            | 940 "       |
| Tartaric acid .. .. .   | 188 "       |
| Ferric chloride .. .. . | 1,500 "     |
| Water .. .. .           | 1,000 c.cm. |

The dried paper was spread with gallic acid, and after exposure developed with water. Fisch (1886) gives another formula:—

|                             |          |
|-----------------------------|----------|
| (1) Gum arabic .. .. .      | 50 parts |
| Water .. .. .               | 500 "    |
| (2) Tartaric acid .. .. .   | 50 "     |
| Water .. .. .               | 200 "    |
| (3) Ferric sulphate .. .. . | 30 "     |
| Water .. .. .               | 200 "    |

(4) Solution of ferric chloride, 45 deg.

Beaume .. .. . 100

Add No. 2 to No. 3, then pour this into No. 1, and add No. 4. After exposure the paper is developed with gallic acid, 2 to 3 grm.; oxalic acid, 0.1 grm.; water 1,000 grm.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m., and other communications having reference to the Sale and Exchange) column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.



**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the **AMATEUR PHOTOGRAPHER**, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to **Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.**

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the **EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C.**, who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d. or a commission of 2½ per cent., upon the sale price of the apparatus.

**Cameras, etc.**—First-rate mahogany long-focus camera, half-plate, leather bellows, three double dark slides, rising front, reversing and swing back, new, only used since June, price £4 4s.; deposit. — J. Breeze, 18, Crosby Road, Birkdale, Southport.

Half-plate International camera (only), like new, two mahogany and three metal backs (Tylar's), cost over 90s., take 60s.—Grover, 40, Coniger Road, Parson's Green, S.W.

**Cameras, Lenses, etc.**—For sale, quarter-plate camera by Meredith, complete, with lens, stand, and one slide, 47s. 6d.; also focussing clock, extra slide, and two vulcanite trays, 5s.—H. G. Smith, Brentwood Road, Romford.

Best London-made half-plate camera, all movements, with three double-hinged backs, almost new, £3 10s.; Optimus 9 by 7 R.R. lens, with iris diaphragm, quite new, splendid instrument, £3 15s.—F. Gibbons, 32A, Lee Terrace, Blackheath, London.

Half-plate camera, back, lens by Tench, stand, bag, two metal slides, with adapter. What offers? To be seen, W. U. C., 41, Lansdowne Gardens, Clapham Road, S.W.

Automatic hand-camera, holding 12 plates, which are changed with one movement, roller blind shutter covered with leather, practically new, no lens, can be fixed on stand, will sell for 50s.; quarter-plate Laverne's rapid rectilinear, never been used, sell for 18s. 6d.; quarter-plate portrait lens (no name), splendid lens, equal to new, 17s. 6d.; also Kershaw and Thornton-Pickard's instantaneous shutters, 8s. 6d. each, suitable for hand-cameras.—Bington, Old Trafford, Manchester.

Optimus hand magazine camera, brass-bound, mahogany, rapid rectilinear lens, an excellent instrument, £5 5s., in case, splendid condition.—E. M. Hellier, Dorset Villa, Yeovil.

**Dark Slides.**—Three good half Instantanograph, 6s. 9d. each; canvas camera case, leather fitted, new, 8s. 3d.; approval.—Adams, 90, Hatton Garden, E.C.—[Trade.]

**Enlarging Apparatus, etc.**—Enlarging lantern by Houghton and Sons, 8½ condenser, good as new, £5; also landscape lens, half-plate, iris diaphragm, and shutter, 10s.—Berkeley, 4, Gray's Inn Square, W.C.

**Hand-Cameras, etc.**—Talmer quarter-plate, R.R. lens, excellent condition, £3 15s., including sling case; cost £4 18s. July last.—D. 50, Shepherd's Bush Road, W.

Latest pattern hand-camera by Swinden and Earp, carries 20 quarter-plates, light, compact, and self-contained, in leather case, no dark slides or metal sheaths required, nearly new, price £5.—A. Weston, 7, Angell Road, Brixton, S.W.

For sale, guinea Presto hand-camera, six slides, finder, complete, quite new, sell cheap.—Roberts, care of Jewell, 151, London Road, Liverpool.

No. 4 Kodak Junior, with leather case and strap, 24 films, cost £10 7s. 6d., price £7.—L., 13, Cornwall Terrace, Regent's Park.

5 by 4 Swinden and Earp Prize Medal hand-camera, as new, cost £8, together with leather case, cost 13s., price £6 15s.—P. Bradshaw, Ramsgate.

Kodak No. 3 Junior, in perfect order and as good as new, leather case, and four-folding tripod stand, complete, film for about 12 pictures in camera and roll of 56 unexposed, cost £9 8s. 6d. less than a year ago, lowest price, a bargain, £7; deposit.—F. Currey, Limerick, Ireland.

**Lantern.**—A bargain! Optimus magic lantern, limelight or oil, splendid definition, cost over £5, will take £2 10s., or best offer.—Apply, 258, office of this paper, 1, Creed Lane, E.C.

**Lenses, etc.**—Dallmeyer 10 by 8 W.A. landscape lens, condition perfect, equal new, cost £5 10s., price £3 10s. May be seen.—J. P., care of Morley and Cooper, Upper Street, Islington, N.

For sale, Ross 8 by 5 rapid symmetrical lens, £4; no approval.—Glazebrook, Melling Vicarage, near Liverpool.

Lens, half-plate, iris diaphragm, instantaneous shutter, three metal dark slides, and adapter to fit Instantograph, nearly new, 25s.—Bolton, Newport Road, Cardiff.

Ross' 5 by 4 rapid symmetrical, £2 15s.; pair Optimus 5 by 4 wide-angle symmetrical, £2 10s., or £1 5s. each.—E. Brightman, Lyndale, Redland Road, Bristol.

Suter's 2D lens, just new, cost £8, works at f/5.5, covers 12 by 10 with small stop, splendid instrument; will exchange for cabinet portrait lens by good maker, or would purchase.—Hare, Photographer, Sutton, Surrey.

**Rolling Press.**—6½ in. rolling press, excellent condition, with stand, 25s.; photograph can be sent.—Fox, Basingstoke.

**Sets.**—Underwood's quarter-plate Tourograph set, complete, three double backs, lock up case, new, 45s.; quantity **AMATEUR PHOTOGRAPHERS**; offers?—Carre, Bording, Guernsey.

Underwood's half-plate Instanto set, good as new, only 61s. 6d.—H. Rowe, Wallbridge, Stroud, Glos.

Large sliding camera, 15 square, one slide, 5 by 4 camera, whole-plate lens (Lancaster), half burnisher, two bars, complete, cost 70s.; strong ash sliding tripod, mahogany sliding tripod, rustic garden seat, 12 printing frames, interior background, 200 mounts, chemicals, all in good condition, £4 15s. lot, or separate.—Simpson, Farnley Wood, Gildersome, Leeds.

Half-plate camera and three double backs by Doland, Rectigraph lens, with iris diaphragm and cyclist's stand, and instantaneous Thornton-Pickard shutter, all good as new, price £7 10s.—O. Pain, Kingswood, Derby Road, East Sheen, S.W.

For sale, half-plate camera, tripod, seven metal dark slides, French R.R. lens, three half-plate and three quarter-plate printing frames, dishes, etc.; Grubb's B3 cabinet lens, with diaphragms. What offers?—No. 255, office of this paper, 1, Creed Lane, E.C.

Folding mahogany camera, dark slide, screen, five carriers, combined stereoscopic and portrait, three sharp English lenses, two rising fronts, in stout leather case, 65s.; also quick-acting portrait lens by Janin, 3½, 50s.—Albright, Croydon.

Lancaster's 1891 half-plate camera, three backs, tripod, Photo. Artists' rapid rectilinear lens, as new, price £4; approval; deposit.—Herbert Spencer, Masboro House, Balham.

Half-plate Instantanograph, well made from 1891 pattern, complete, lens, shutter, tripod, three double slides, satchel, focussing cloth, good condition, bargain, 65s.—Photo, 275, Mare Street, Hackney.

Half-plate best London-made camera, three double slides, tripod, and R.R. lens, as new, bargain, 85s.—John Slade, Slad Road, Stroud, Glos.

Lancaster's half-plate Instantanograph, latest pattern, complete, camera, lens (iris diaphragm), five double backs, stand, two shutters, one pneumatic, guaranteed perfect condition, £3 15s.; Griffith's hand-camera, leather covered, with finder, £1 2s. 6d.—Kidon, 37, Villa Road, Brixton.

Beautiful little quarter-plate camera, tripod in case, and Wray's R.R. 5 by 4 lens, very little used, must sell, £4 15s. for immediate cash.—Apply, No. 257, office of this paper, 1, Creed Lane, E.C.

Lancaster's quarter-plate Instantanograph camera, 2 dark slides, lens, tripod, and waterproof bag, in splendid condition, £2.—Hutchinson, Mercer Row, Lough.

Half-plate camera (Lancaster's Instantanograph), two double dark slides, "Optimus" 7 by 5 R.R. lens, Thornton-Pickard time and instantaneous shutter, and stiff canvas case. Not much used, in perfect condition, 6 s.; anything sold separately.—No. 260, office of this paper, 1, Creed Lane, London.

Half-plate mahogany camera, all movements, three slides, R.R. lens, three-fold stand, as new, 100s.; Lancaster's special quarter-plate camera, three backs, all brass bound, 50s.; stereo camera and lens, by Shepherd, 30s.—Dann, Reading.

Half-plate "Meritoire" camera, lens, stand, slide, practically new, cost 3 s., sell for 2 s.—Miller, 6, Barrowgate Road, Chiswick.

Lancaster's quarter-plate Instantanograph, 3 double backs, brass-bound, rapid rectigraph lens, pneumatic shutter, tripod, bag, dishes and lamp; also Maltum-in-Parvo camera, 12 by 10, cost £7. To be seen by appointment.—W., 16, Mirabel Road, Dawes Road, Fulham.

**Shutters, etc.**—For sale, Newman's ½-plate instantaneous shutter for R.R. lens, in perfect working order, with six diaphragms, cost £2, change necessitated by iris, will take 16s. 6d.—Apply, Vicar, care of Baynes and Co., 120, Cannon Street, E.C.

**Stereoscopic Apparatus.**—Stereoscopic hand-camera by Rouch (Eureka model), iris diaphragms, special regulating shutter, new, £10, cost £14.—Cornish, 45, Brompton Square, S.W.

**Sundries.**—1892, £17 17s., cushion tyre, diamond frame, ba head Safety, never used, best makers, offered £7; approval anywhere.—Address, Embosser, 7, St. Benedict's Road, Norwich.

Thornton-Pickard time and instantaneous shutter, 1½ in., cost 20s. 6d., as new, 13s. 6d.; Hancock's (London) 5 by 4 R.R. lens, new Waterhouse stops, cost 25s., works f/6, only 20s.; Ward's finder detective, 7s.; **AMATEUR PHOTOGRAPHER**, 1889, 2s. 3d., 1890, 2s. 3d., half-year, July, 1891, 1s. 3d.; "Photography," 1890, 2s. half-year, July, 1890, 1s.; "Albumacke," 1890, 1891, "Year Book," 1891, 7d. each; fourteen 3d. numbers "Photographic Record," 1s.; 32 good lantern slides, 4s. 6d.; 18 unmounted, 1s.; 20 quarter-plate negatives, 1s. 6d.; Vici's exposure tables, new, 10d.;

everything perfect; free to rail, —10, Albion Street, Miles Platting, Manchester.

Wood's washer, 8s. 6d.; Adams' Pantoscope, 8s. 6d.; Parks' No. 5 bamboo stand, ball and socket, jointed legs, 7s. 9d.; Decoudun's photometer, 3s. 6d.; Emerson's "Naturalistic Photography," 3s.; Robinson's "Picture Making," 1s. 9d.; "Pictorial Effect," 1s. 9d.; all lowest price and post free (washer excepted).—H. Sprunt, 75, Loampit Vale, Lewisham, S.E. Seen by appointment only.

Referee-pattern Safety, cushion tyres, ball bearings throughout, including pedals, beautifully nickel-plated and enamelled, perfect condition; bought last autumn and never used; approval; price £7 10s.; bargain; worth much more.—W. F. B., 28, Clarkson Street, Ipswich.

For sale, Houghton's developing sink, complete, in perfect condition, 3 guineas.—George Kempsey, Fernilee Hall, Whaley Bridge, via Stockport.

£30 photographic outfit for 1s. 6d.! Every amateur, professional, and assistant should send stamp for particulars.—Address, Outfit, 73, North Street, Colchester.

**Tripod.**—Mahogany half-plate rigid tripod, as new, 6s.; approval.—W. Campbell, 44, Castle Hill, Avenue, Folkestone.

## WANTED.

**Cameras, etc.**—Wanted, 1891 whole-plate camera, complete, approval.—Weston, jun., Cradley Heath, Staffs.

No. 3 Kodak, cheap for cash; also stereoscopic camera, adjustable to half-plate.—No. 256, office of this paper, 1, Creed Lane, E.C.

Half-plate camera, all movements; also tripod; approval.—McMurdo, Bellshill, N.B.

Wanted, 5 by 4 camera and three double slides, good and cheap.—White, 119, Liverpool Road, Manchester.

Wanted, half-plate Optimus wide-angle camera, extra-long focus, with three dark slides, cheap, good working order.—Mrs. Mickle, 36, Hans Place, London.

**Cameras, Lenses, etc.**—Whole-plate camera, long-extension, with or without lens; approval.—Evans, stationer, Conway.

Wanted, 12 by 10 studio camera and portrait lens for same, also accessories; must be in good condition and cheap; approval.—Landon, Percy Villa, Watford.

**Dark Slides.**—Lancaster's Special or Instantograph quarter-plate slides, brass-bound preferred.—W. George, 100, Mount Pleasant Road, Hastings.

**Hand-Cameras, etc.**—Wanted, good hand-camera, Ideal, Facile, Talmer, etc.; must be good and cheap.—E. P. Moore, 86, Fenchurch Street, E.C.

Wanted, No. 3 or 4 Kodak, Junior preferred; approval.—F. P. Bayley, 88, King Street, Manchester.

Wanted, good hand-camera; state full particulars, price.—Whiteside, St. Nicholas, Cardiff.

Wanted, good hand-camera; exchange 18 ct. gentleman's diamond ring, new, cost £7.—17, Sedan Street, Walworth.

Wanted, Apts universal, all movements; approval, cash.—No. 259, office of this paper, 1, Creed Lane, E.C.

Wanted, good automatic hand-camera for quarter-plates, R.R. lens; will give in exchange beautifully-polished metal brass horizontal engine, 2 in. stroke, also polished copper vertical boiler, tube, valve, fire-box, complete; will sell 75s. What offers?—Smith, 48, High Street, Morley.

**Sets.**—Wanted, half-plate set, good maker; also Stirn's Waistcoat camera, larger size.—Alf. Tindall, Fraserburgh, N.B.

**Shutter, etc.**—Wanted, Thornton-Pickard time and instantaneous shutter, 1½ in. diameter; also good hand-camera to cover quarter-plate; must be cheap for cash.—Wm. Baron, High Street, Golborne.

**Sundries.**—Adapter wanted, Shew's, to fit half Instantanograph.—Masse, 37, Mount Park Crescent, Ealing.

**L**ENSES adapted to mount flanges, 1s. 9d., post free.—Hiljessam, 37, Mount Park Crescent, Ealing. [Trade.]

**R**ESPECTABLE LAD WANTED, who has some knowledge of Photography, with a view to Apprenticing to Photo Zinco Profession.—Apply to A. Bourne and Co., 73, Ludgate Hill, E.C.

**FRIDAY NEXT.—CONTENTS OF A PHOTOGRAPHIC STUDIO REMOVED FROM EASTBOURNE.**

**M**R. J. C. STEVENS will include in his Sale by Auction at his Great Rooms, 38, King Street, Covent Garden, on Friday next, March 25th, at 12.30 precisely, the Photographic Stock-in-Trade removed from a studio at Eastbourne, comprising studio and other cameras and stands, lenses by Dallmeyer, Wray, and others, printing frames, bathe, frames, and specimens, mounts, furniture, etc., etc., without reserve. On view the day prior from 2 till 5, and morning of sale, and catalogues had.



# The AMATEUR PHOTOGRAPHER

Telephone No. 1645 Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

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FRIDAY, MARCH 25, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

*The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.*

**OUR VIEWS.**—Notices to Readers—Third Ladies' Competition—Addresses Wanted—Judging—American Lantern Slide Exchange—Polytechnic Lantern Show—"Esmail" Competition—Exposure—Camera Club Conference and Exhibit.

**ARTICLES.**—Elementary Photography (Hodges)—Instantaneous Photography (Harrison)—Developing Collodio and Gelatino-Chloride Prints (Valenta).

**REVIEWS.**—Art of Retouching (Johnson)—The Imperial Dry Plate Company.

**EXHIBITIONS.**—Barrow-in-Furness.

**SOCIETIES' MEETINGS.**—Ashton—Birkenhead—Blackheath—Canterbury—Croydon—Dundee and East Scotland—Faversham—Hackney—Hull—Ireland—Ipswich—Kendal—Leigh—Lewisham—Leytonstone—Liverpool Y.M.C.A.—Lowestoft—Midland—North Kent—North London—North Middlesex—Notts—Polytechnic—Putney—Richmond—Southsea.

**LETTERS TO THE EDITOR.**—A New Portable Dark Room (C. J. Davies)—Platinum Toning (Jas. Brown)—West Surrey Photographic Society (F. H. Smith)—Societies' Reports (Rectigraph)—The Mutual Photographic Club (T. Mansell)—Speed of Plates (F. E. R.)—Enfield Camera Club (J. Dudin)—The Actinograph (Hurter and Driffield, Marion and Co.)—An Explanation Wanted (T. B. Earle)—Aluminium (Sir Henry Bessemer)—Kensington and Bayswater Photographic Society (C. W. Brumwell).

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All Communications should reach the Editor by Tuesday.)

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE and EXCHANGE Advertisements, or other business matter for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers HAZELL, WATSON, and VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON E.C. (SALE and EXCHANGE Advertisements, at the charge of Three Words for One Penny, can be received as late as WEDNESDAY MORNING.)

**"Amateur Photographer" Monthly Competition No. 35.**—"INLAND SCENERY, WITH OR WITHOUT FIGURES." Latest day, April 25th.—Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, May 13th.)

**"Amateur Photographer" Ladies' Third Competition.**—"LANDSCAPE OR SEASCAPE—LANDSCAPE WITH FIGURE—PORTRAITURE OR FIGURE STUDY." Latest day, March 31st. Prizes: Gold, Silver, and Bronze Medals, and Certificate. Not more than eight nor less than six mounted prints to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C.

We should be much obliged if our readers and correspondents would kindly recognise that there are certain rules to be observed for correspondents in each department of the paper. For instance, all Sale and Exchange advertisements, orders, subscriptions, etc., should be addressed to the publishers, and not to the Editor, and all literary matter, Queries and Answers, etc., to the Editor, and not to the publishers; it frequently happens that delay arises from letters being wrongly addressed. Further, our work would be much facilitated if applications for entry forms were in all cases accompanied by a stamped, addressed envelope, and marked outside "Competitions."

In future all Sale and Exchange advertisements must reach us by Tuesday evening's post, or we shall not be able to guarantee insertion in the following Friday issue.

We again beg to call the attention of our fair readers to the "Ladies' Third Competition," which closes on the 31st inst. The subjects are "Landscape or Seascape—Landscape with Figure—Portraiture or Figure Study." The pictures and negatives must be the unaided handiwork of the competitor; the selection of subject, exposure, development, retouching (if any), printing, toning, and all other operations, except mounting, must be done by the operator, and no picture is eligible which has received an award at any previous competition or exhibition. The prints sent in to this competition will be judged by two gentlemen of good standing in the photographic world, and the prizes will be announced and some of the pictures reproduced and all criticised in one of the issues of the AMATEUR PHOTOGRAPHER in May.

The following gentlemen are requested to send their addresses, which have been mislaid:—W. M. Smith, winner of bronze medal in Lantern Slide Competition, 1891; W. Cooper, winner of bronze medal in Monthly Competition No. 29; and J. A. Keasley, winner of bronze medal in Monthly Competition No. 30.

The subject of judging and the giving of awards is always one which causes some cavilling. Disappointed exhibitors are apt to quarrel with the decisions made, and to do their best to make things for the time being somewhat unpleasant for everybody, themselves included. In the case of our Monthly Competitions we do our best to satisfy one and all; sometimes a competitor sends up a print which is a disgrace, technically, and sometimes we have had com-



position or bad work artistically. In each case we try to give some help by pointing out faults and possible improvements. Sometimes we offend our competitors by withholding our opinions when such would be very harsh, and at other times we offend by too plain speaking. It is therefore very satisfactory to receive the following from a gentleman who is an octogenarian, and who worked at photography for amusement long before the judges of our last competition were out of the schoolroom:—

"Although I have been for some time engaged as an amateur in photography, I have never had the privilege of having defects pointed out until I submitted some photographs of inland and river scenery for your kindly criticism. There is some hope that, after a few years more patience, perseverance, and profiting by those remarks, I may be able to produce some work that shall merit honourable mention, if not worthy of a prize. Now the faults have been shown I can see the propriety of your observations."

WE have received, through the kindness of Mr. F. C. Beach, the Editor of the *American Amateur Photographer*, set No. 2 of American Lantern Slide Exchange, consisting of one hundred very fine slides. We shall be pleased to loan these slides to any society applying for the same, and a booking fee of 3d. to cover postage will be required. The following dates are already booked:—April 6th, Blackheath; April 22nd, Holborn Camera Club.

CAPTAIN C. E. GLADSTONE, R.N., will deliver a lecture on "Westminster Abbey," illustrated by lantern slides, on Tuesday, 29th inst., before the members of the Polytechnic Photographic Society, in the large hall, 309, Regent Street, W. Tickets may be had gratis by applying, with stamped directed envelope, to the Secretary, 309, Regent Street.

A. GUYE, JUN., of 77, Farringdon Road, is, as will be seen by our advertisement pages, offering substantial prizes to our readers for results obtained on his "Esmail" enamels. The process is by no means a difficult one, especially as Mr. Guye does not demand that competitors should do their own firing, in which the greatest difficulty occurs. We propose next week to give a short summary of the necessary operations, the first essential of the process being a good transparency.

WE have many letters on "Exposure" and means of reckoning the same, and we shall be glad to hear all sides of the question, as we may thus possibly obtain some ultimate benefit from the discussion now going on. Mr. Watkins has sent us some notes, and we shall hope to be able to sum up briefly but clearly on the several questions.

THE Camera Club Conference was opened on Tuesday afternoon, March 22nd, at 3 p.m., by Captain Abney, who in his presidential address referred to the International Photographic Congress of last year, which had attempted to fix the standards, but expressed the opinion that the English weights and measures were so firmly rooted as to be extremely difficult to move. Reference was also made to Lippmann's experiments, and Captain Abney again expressed his opinion that "photography in colours had not advanced." Mr. Elder's photodynamical theory of the colour of chloride of silver was next mentioned, and Professor Boys' photographs of bullets and rapidly moving projectiles. The service rendered to astronomy by photography was next referred to, and, finally, the presidential address concluded with an appeal for the founding of a Photographic Institute.

M. Leon Warnerke then gave an account of some interesting experiments he had been carrying out in "Chemigraphic Etching," which consists practically of causing a deposit of some metal, such as nickel or cobalt, on sheet

zinc, and then placing in an acid etching bath of some acid so dilute as not to act on the pure zinc but only on the amalgamated places. M. Warnerke stated that he had found ammonio-tartrate of nickel the best salt to use; he had also used aluminium with promising results.

Mr. Willis then described the latest improvement in the platinotype paper, by means of which a print could be developed on cold solutions of oxalate, or oxalate and phosphate of potash at ordinary temperatures, varying from 43 deg. to 70 deg. F.

Mr. Andrew Fringle then read his paper on "Photography as an aid to Medical Research," illustrating the same by the lantern slides of malformations and photomicrographs of bacilli, stained carbon tissue, slides, etc.

At 8 p.m., "a Symposium on artificial light" was presented by Mr. Van der Weyde, who practically illustrated his remarks by taking negatives of Captain Abney, Sir George Prescott, and Mr. Geo. Davison. Mr. Humphery then explained his new oxy-magnesium lamp, showing its utility by exposing several platinotype prints, burning 20, 30, and 40 grains of magnesium, and obtaining fully-exposed prints, the longest time being only  $4\frac{1}{2}$  secs.

Several of the papers were followed by interesting discussions, but we are not able to do more than record the fact in this issue. The attendance in the afternoon was fairly good, but considerably better in the evening.

#### THE CAMERA CLUB EXHIBIT.

THE exhibit of members' pictures now on view, and to which admission can be gained by presentation of a member's card, or by obtaining one from Mr. George Davison, the Hon. Secretary, is by no means a large show, but one of very good quality.

The first pictures are two small studies by Mr. Cembrano, jun., in his now well-known style—No. 2, "Sunset, Winter," and "Dawn." In Nos. 5 and 26 Mr. H. Stevens shows two of his skating studies. Mr. H. P. Robinson has two characteristic pictures, "May Fly Time" and "Trudging Homewards." Mr. W. L. Colls shows a very fine effect in 46, "Twilight on the Thames." In 91 to 94 Mr. Gambier Bolton has some studies of some of the Queen's dogs and animals. Mr. A. R. Dresser shows six quarter-plate sea studies, and Mr. Alfred Watkins exhibits a very fine bird study in 101, "A Wild Rock Dove." The pick of the exhibition are certainly in Mr. J. Gale's frames, 108 to 113. Mr. W. L. Colls shows what can be done in the shape of portraiture without a studio; and then the most striking exhibits are Lamond Howie's geological prints. Mr. A. Horsley Hinton shows in "October" his usual treatment of what might otherwise be most unphotographic subjects, but Mr. Horsley Hinton does not fail to attack them.

**Brixton Camera Club.**—The third annual meeting was held on the 17th inst., Dr. J. Reynolds in the chair. The Committee in presenting their report, said that the past year had been most satisfactory, and congratulated the members upon the generous way they had subscribed to the lantern fund, as the Club now possessed a most complete outfit, which included a 40 ft. gas-bottle, regulator, and gauge, besides the lantern and all accessories. A *resumé* of the year's doings followed, and the Committee closed their report with a recommendation to establish a series of "Beginner's Nights," which they hoped still further increased the usefulness of the Club. It was announced with regret that the President, Mr. A. R. Dresser, would be unable, through continued ill-health, to offer himself for re-election. It was resolved to present him with an illuminated address as a token of the club's esteem and regard. Dr. J. Reynolds, F.R.G.S., and Mr. J. W. Coade were unanimously elected President and Vice-President. The Committee elected was as follows: Messrs. T. J. Bartrop, W. Bevins, J. A. Butler, Kent, Haward, and Edwards, of whom the first four were members of the retiring committee. Mr. F. W. Levett again was chosen for the Secretaryship, as was Mr. R. G. F. Kidson for the post of Assistant Secretary. After the meeting a most successful demonstration upon "Lantern Slides by the Collodio-Bromide Process" was given by Mr. F. Goldby. A short account of this paper, with formulae, will appear if possible in the next issue. The prints sent in to the last AMATEUR PHOTOGRAPHER Monthly Competition were on view, by the courtesy of the Editor.



## Letters to the Editor.

### A NEW PORTABLE DARK-ROOM.

SIR,—If I may be allowed to trespass on your valuable space, I should like to offer a suggestion for the construction of a portable dark-room which, I feel sure, would satisfactorily meet a long-felt want.

The dark-room I propose would take the form of a bell tent, made of two thicknesses of best black twill, and measuring about fifteen feet in circumference at the base, and about seven feet to the apex. The usual centre pole would be dispensed with, and the tent, when required for use, suspended from the curtain rod of a window, while a square of ruby calico let into the side would admit a good and safe working light to the interior.

The table and chair of the operator would keep the walls of the tent apart, and by allowing a foot or so of the twill to rest on the ground any danger of light entering from beneath would be obviated.

The cost of making a tent as above would be about fifteen shillings, while its small bulk when folded, easy erection, and general simplicity cannot fail to recommend it to amateurs contemplating a tour with the camera.—Yours faithfully,

C. J. DAVIES.

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### PLATINUM TONING CHLORIDE PRINTS.

SIR,—I note the remarks of Mr. T. H. Powell *re* my paper on the above subject. He represents me as failing to say whether the toning action can be easily watched in the platinum bath. If he again refers to my words he will find I stated distinctly that such action is almost invisible, and that the tone is only seen after the print is fixed.

With regard to the suggested use of a gold toning bath followed by one of platinum, I am unable to speak from practical experience, but I should expect dark tones to result from such a process, whereas my aim in using platinum is to obtain tones of very considerable warmth.

If Mr. Powell will refer to an article by the Rev. H. B. Hare, on page 636 of the "British Journal Photographic Almanack" for 1891, he will find a similar gold and platinum process applied to albumen paper described and recommended.—I am, etc.,

JAS. BROWN.

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### WEST SURREY PHOTOGRAPHIC SOCIETY.

SIR,—I shall be glad if you will give me the space in your paper to announce that on and after April 13th next, our meetings will be held in the Lecture Hall of the Battersea Public Library, Lavender Hill, S.W., the commissioners having kindly granted us the use of the same.

Thanks to your paper, our list of members is now a large one, but I am sure there are many photographers in our district who do not know of our Society, and I should be glad to furnish any lady or gentleman with full particulars.

Again thanking you for past kindnesses, I remain, yours faithfully,

F. H. SMITH.

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### SOCIETIES' REPORTS.

SIR,—As a subscriber of many years' standing, I thoroughly agree with the remarks of "An Old Subscriber" and "A Secretary" in your issue of the 18th March.

The reports of meetings which occupy so much of your valuable space possess no interest whatever to nine-tenths of your readers, and I would suggest that in future these reports be treated by you in the same manner as "Societies' Fixtures," namely, by allotting one single line to each meeting. This will relieve the overworked secretaries of their present "arduous task" of sending you full reports of their Societies' meetings, and the substitution of four or five columns of *readable* matter will, I am sure, be welcomed by the great majority of your readers.—Yours, etc.,

RECTIGRAPH.

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### THE MUTUAL PHOTOGRAPHIC CLUB.

SIR,—May I be allowed to insert a description of the above club, thinking it may interest the readers of your weekly.

We have now a membership of eight, all of whom take a great interest in our welfare.

The albums are issued every month, and prizes are given for

the best photograph. A discussion takes place with each album, and we are about to start practical articles by each member.

The albums, when returned to the Secretary, are packed with the criticism book and numbered. When we have enough for each member, each chooses a number, which album is sent to him. We have been successful in obtaining the valuable services of the editor to criticise each album, from which we derive a great benefit.

I shall be pleased to send full particulars on hearing from anyone wishing to join, and I must say that we gladly welcome ladies to our ranks.—Yours, etc.,

THOMAS MANSELL (Secretary.)

Avondale, Westwood Park,  
Southampton, March 21st, 1892.

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### SPEED OF PLATES.

SIR,—I am very much obliged to Mr. Clifford E. F. Nash for his answer to my query (No. 5,513), but I cannot agree with his figures at all, as during last week I was able to experiment with some of both the plates I mentioned, and the results obtained were as near as possible as follows: Ilford ordinary, actinograph number 16-18; Thomas's instantaneous, actinograph number 47-50, or very nearly three times as fast.—Yours, etc., F. E. R.

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### ENFIELD CAMERA CLUB.

SIR,—Referring to my previous circular, I have to inform you that at the meeting held on the 10th inst. it was resolved:

- (1) To dissolve the Enfield Camera Club.
- (2) To leave the Committee to realise the property of the club, and apportion the result to members at their earliest convenience.

The above resolutions speak for themselves, and I send you same with much regret. You will hear from me when the latter resolution has been carried into effect.

Those members who joined quite recently, and paid their subscriptions and entrance fee, will, of course, have same returned.—Yours, etc.,

JAS. DUDIN (Hon. Sec.)

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### THE ACTINOGRAPH.

SIR,—Colonel Noverre seems very anxious for a reply from us to his letter of the 8th ult., and though, as we before told you, we cannot possibly pretend to notice every passing criticism upon our investigations generally, we should be sorry to appear discourteous to him. We have, therefore, re-read his letter, and offer the following remarks in reply.

Colonel Noverre speaks of our instrument as a "new form of actinograph." We had certainly looked upon the designation "Actinograph" as essentially our own; at least, unaware of any previous use of the term, we coined the word in order to express, as accurately as possible, the precise function of our instrument. As to its newness, we have only to say that it has been in public use for the last four years.

We can assure the Colonel that the difficulty he apprehends in judging when the light is "very bright," "bright," etc., is more an imaginary than a real one, and that we attach infinitely more importance to the fact that users of the "Actinograph" are able to exercise the necessary discrimination, than to his mere anticipations to the contrary. If Colonel Noverre does not know how to ascertain when there is a "very faint shadow," he is certainly faced with a difficulty which nobody else has found, and which would place him at some disadvantage. The light indicated by "dull" and "very dull" we distinctly admit is more difficult to determine, but a little experience will greatly help in this, and it is, of course, comparatively seldom that the photographer is called upon to make an exposure when there is absolutely no sun. Colonel Noverre is anxious to have a table giving the value of the light for every hour of the day throughout the year; the light scale of the actinograph will supply this information.

We have not put the Actinograph forward as being absolutely infallible, or as altogether obviating the necessity for the exercise of a certain amount of discretion and judgment in dealing with special classes of subjects. As Mr. Cowan aptly said recently, at a meeting of the Photographic Society of Great Britain, "He did not think the instrument was intended to be used without brains." We do hold, however, that the Actinograph extends to the user an amount of assistance in the exercise of his judgment which has hitherto been unattainable, and that it has reduced his



reliance upon his judgment to a minimum. If Col. Noverre waits for an instrument with hands like a clock, which will point infallibly to the correct exposure, or for some automatic machine which will uncap and cap his lens at the right moment, he will probably have to wait a long time. The nearest approach to the former yet invented lies in our actinometer; and our reasons for preferring the actinograph in practice are given elsewhere.

Col. Noverre must understand that the actinograph is really only a minor detail invented in the course of our investigations, and that, perhaps, its most valuable feature, and one not apparent to the casual observer, lies in its speed scale. This scale renders the value of this instrument complete only when the speed of the plate has been properly ascertained by our method. It is chiefly because we have rendered it possible for the first time to accurately estimate and compare the relative speeds of plates, and because the actinograph is essentially designed to work with the speeds so ascertained, that it proves so reliable a guide. It is obvious that the value of an accurate means of estimating the light would be seriously impaired unless accompanied by an accurate means of estimating and comparing the relative speeds of plates. The speed of the plate is a primary essential in the calculation of an exposure, and no reliable means of estimating the speed has existed hitherto. The necessity for such a means is most strongly indicated by the variation which takes place from time to time in the rapidity of plates bearing the same brand, and possibly the same sensitometer number, owing to the difficulty of preparing two batches of emulsion of the same rapidity.

Colonel Noverre must excuse our saying so, but he is not in a position to fairly and accurately estimate the value of the actinograph until he has familiarised himself with our investigations generally. From these investigations he will find, among other things, that the amount of latitude admissible in exposure depends upon the richness of the plate in silver salts, and that with a well-coated plate the latitude is such that a very fine discrimination between, say, "very bright," and "bright" is uncalled for.

We have little doubt that when Colonel Noverre comes to realise the great disadvantage under which he has hitherto laboured from want of a scientific and reliable method of estimating and comparing the rapidity of his plates, he will see that, in conjunction with such a method, the actinograph may, after all, be of greater value as a guide to exposure than he was, at first sight, inclined to think.—We are, yours, etc.,

F. HURTER AND V. C. DRIFFIELD.

Appleton, Widnes, March 21st, 1892.

[Messrs. Marion and Co. have forwarded to us a copy of a letter addressed to Colonel Noverre on the 14th inst., which is an answer to his letters in our previous issues, and which evidently crossed Colonel Noverre's letter to us. Colonel Noverre will test the instrument for himself. We refer to this subject in "Our Views," and pressure on our space this week prevents us doing more.—Ed. "AM. PHOT."]

To Colonel W. L. Noverre, Brighton.

SIR,—Seeing your letters of Feb. 12th and March 11th in the AMATEUR PHOTOGRAPHER, we have pleasure in sending you one of the little pamphlets respecting Hurter and Driffield's actinograph, presuming that you are without one, and shall further be pleased to send you an actinograph for trial. This, we think, would dispel your idea that there is a great difficulty of judging the light sufficiently closely to effect a perfect exposure by means of the actinograph. On page 15, "Table of Factors," are given speeds for four varieties of views.

Since we made use of this instrument, and numbered our plates with their correct speed, according to Hurter and Driffield's system, our operator whom we employ for the testing of plates, has never once failed in obtaining correct exposures. Prior to the use of the actinograph failures were rather frequent. Several of our customers who have purchased the actinograph speak of it with the highest praise. However, we should very much like you to give it a practical trial.—Yours truly,

MARION AND CO.

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#### AN EXPLANATION WANTED.

SIR,—Referring to Henry Harbour's letter in your last issue under this title, I beg to state that Mr. W. H. Smith, from the Platinotype Company's Works, did certainly give the demonstra-

tion referred to before the members of our club. He claimed that the process and paper both differed from either the "hot" or "cold bath" processes now in general use, easier to work, but giving results equally good. He distributed among our members several of the prints developed at the demonstration, and some samples of the paper (one enclosed herewith), which he explained, however, was not yet on the market, in consequence of new machinery having to be laid down. This he has confirmed by subsequent correspondence.

I am therefore quite at a loss to understand the Company professing ignorance in the matter, as the correspondence has been conducted on their printed note paper.

I trust this will now bring the desired explanation from the Company, as the process is a most attractive one, and the new paper has been eagerly looked for by our members.—I am, etc.,

THOMAS B. EARLE (Hon. Sec.)

[Mr. Willis' paper read at the Camera Club Conference treated of the new paper and as soon as possible will be printed in our columns. Mr. Willis explained that a breakdown of machinery had prevented the issue of the paper commercially.—Ed. AM. PHOT.]

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#### ALUMINIUM.

SIR,—Your correspondent, Mr. H. Taunton Collins, refers in his letter to you of March 14th, to my quotation of 3s. 4d. as the price of aluminium, and being desirous of giving you my authority for that quotation, I have been searching over my papers, but have not been able to find the very interesting article on the manufacture of aluminium published in an American paper, from which I had quoted. In my search, however, I have come upon some information on the subject which may possibly interest some of your readers, while it more than justifies the low quotation made by me in the *Times*.

In the issue of the *Iron Age* (New York) for March the 10th, I find in the current metal prices for the previous day, aluminium from 94 per cent. to 98 per cent. pure, 65 cents per lb., or 7½d. per lb. below my quotation in the *Times*.

The production of this very valuable and beautiful metal was in its earliest days surrounded by a host of almost insurmountable obstacles, nearly all of which have been overcome by the ever-advancing tide of chemical knowledge, which has at last brought aluminium sufficiently low in price to be fairly classed among the useful metals, and insure for it a great future.

I find in the *Journal of Chemical Industry* for May 30th, 1891, a paper read before the Liverpool section of the Society, by Mr. J. H. J. Dagger, in which the following passage occurs:—

"The improvement in dynamos and electrical machinery has within the last two years reduced the cost of aluminium from 15s. to 5s. per lb. Aluminium having fallen from 360s. in 1885 to 103s. in 1887, to 62s. in 1860, to 20s. in 1862, to 15s. in 1888, and to 5s. in 1890-91."

It must, however, be understood that the low prices quoted refer to aluminium in the ingot, or pig, and not to sheets, tubes, or castings made of that metal, which are still more costly than the same articles would be if made of the metals now in common use.—Yours, etc.,

HENRY BESSEMER.

March 22nd, 1892.

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#### KENSINGTON AND BAYSWATER PHOTOGRAPHIC SOCIETY.

SIR,—The meeting for the formation of this society was held at the Horbury Rooms, Kensington Park Road, on Monday, the 21st inst. There were present: Mr. C. W. Brumwell, in the chair, and about forty others.

It was unanimously adopted that the society should have three officers only, and no committee; the officers to consist of a president, a secretary, and a treasurer. The election of a president was left over until the next meeting. Mr. C. W. Brumwell was elected secretary, and Mr. F. A. Hahn treasurer. The meetings are to be held at 8.30 p.m., on the second and fourth Mondays in each month, until the end of May. The subscription is to be 5s. to the end of the session (September), and not to exceed 10s. annually. The chairman for each meeting is to have been elected at the previous meeting. The next meeting will be held on Monday next, the 28th inst., and will be devoted to the exhibition of lantern slides. Ladies and gentlemen wishing to join the society are requested to send their names to me; my address is 7, Lower Terrace, Notting Hill, W.—Yours etc.,

C. W. BRUMWELL.



## Elementary Photography.

BY JOHN A. HODGES,

### CHAPTER VIII.

#### THE DEVELOPMENT OF THE PLATE.

(Continued.)

Second Lesson in Development—How to Proceed—The Developer—A Good Rule—The Behaviour of the Plate—How the Image should Appear—A Good Negative—Our Third Experiment—The Mode of Procedure—Over-exposure—How to Remedy—A Modified Developer—The Properties of the Various Constituents of the Developer—An Analysis of Results—Under, Over, and Correct Exposure Described—The Hydroquinone Developer—Its Advantages—Its Disadvantages—"One Solution" Developers Condemned—The Eikonogen Developer—Its Merits—A "Combined" Developer—How to Prepare it—An Eikonogen Formula—Concluding Advice.

HAVING carefully followed the instructions in developing given in the preceding chapter, and arrived at the result therein recorded, we proceed to take the second plate in hand, to which, it will be remembered, we gave an exposure of four seconds.

To do so, we begin by making up a developer of the same strength as before, and which stood as follows: Pyro solution, 60 minims; bromide solution, 40 minims; ammonia solution, 30 minims; water, 3 oz. This we have called our "normal developer," and if the exposure has been approximately accurate it should be sufficiently strong, with very little further addition of ammonia, to bring up a good negative. The beginner should make it a rule, at any rate until he has gained some experience, to always commence development with a solution of a certain strength, and he cannot do better, for general purposes, than adopt the formula which has just been given. By working in such a manner, it will be more easy for him to determine whether the plate has been correctly exposed, and according to its behaviour under the normal developer he will be able readily to determine whether it be either correctly, under, or over exposed.

Having mixed the developer, the routine laid down and described in the last chapter must be again carefully followed. We will assume, therefore, that the plate is in its dish, and that the developing solution has just been poured over it. We must now carefully watch it, and contrast mentally what takes place with what occurred when we developed the first plate.

If all the instructions have been observed, we shall notice that in about a minute the portion of the plate which represents the sky, and which, of course, has received the greatest amount of light, will begin to darken, and then, in proper sequence, the rest of the picture will slowly and regularly appear, and, as the action proceeds, the image will gain in strength and detail till, after the lapse of about five minutes, the whole of the picture will appear to have developed. At this stage the plate should be removed from the developer, and, after a slight wash, may be held up to the orange light for a hasty scrutiny. This will probably reveal the fact that although plenty of detail is apparent in the negative, it yet lacks the necessary density. We, therefore, measure into the developing cup another fifteen minims of ammonia solution, together with ten of the bromide solution, and again pour the slightly strengthened developer over the plate; the effect of this addition will be to slightly increase the energy of the developer, and in about five minutes we may remove the plate from the solution, wash off the developer, transfer to the alum bath, again wash, and then fix. We have this time succeeded in producing what should be technically a perfect negative.

We will not, however, rest here, but in order to learn as much as we can on this all-important subject of development we will now proceed to develop the remaining plate, to which, it will be remembered, we gave an exposure of six seconds. If we reflect for a moment upon the behaviour of the two plates which we have already developed, we shall at once, and rightly, assume that this last plate has been over-exposed. Now there are several methods, when we know that we have over-exposed our plates, by which we can to some extent counteract its effect, and these we shall consider when we have gained a little more experience, but for the present we will adopt the mode of working which has already been advised. We, therefore, mix up for the third time our "normal developer," and apply it to the plate. We must, however, watch its action very closely, for almost as soon as the surface of the plate has become thoroughly wetted with the developer, the image will begin to appear. With the weak solution with which we are working this may at once be accepted as evidence of considerable over-exposure, and prompt measures to counteract the effect of this must be taken. The developer is immediately poured away (for it will be necessary now to mix a fresh one of different strength), and the plate well washed under the tap. A fresh developer is then to be compounded as follows: Pyro, 80 minims; ammonia solution, 20 minims; bromide solution, 80 minims; water, 3 oz. This modified solution is then applied to the plate, which, under its influence, if the amount of over-exposure has not been very excessive, will slowly acquire density. If we refer back to the chapter dealing with the preparation of the various solutions, we shall find the properties of the different constituents of the developer briefly described, and if we follow this out a little further we shall be the better able to understand the reasons for thus modifying the development, and its consequent effect upon the plate.

The pyro, as we have already observed, is the true developer, and the density of the negative will depend, to a certain extent, upon the amount present in the mixed developer. The ammonia, or accelerator, as its name implies, hastens or accelerates the action of the developer, and the bromide solution, restrains or retards it. It requires but slight consideration, therefore, to appreciate the general principles which govern the operation of development. In our first experiment we found upon applying the normal developer that the plate was somewhat under-exposed, we therefore accelerated the action of the developer by adding more ammonia, and by increasing the developing energy of the solution, forced more detail to appear in the negative, and gained an increase of deposit. When it becomes necessary to force the negative in this way, the ammonia should be added cautiously in small quantities at a time, as to add the full amount at once would spoil the negative by causing fog, a defect we shall have something to say about hereafter. The second negative having developed with the normal strength of solution, and having required only the addition of a small quantity of accelerator to complete development, proved that the exposure was as nearly as possible correct. The flashing out of the image, in the case of the third negative, immediately upon the application of the normal developer, conclusively proved that the plate had been over-exposed, and to remedy this, development was arrested by washing off the developer, a new one being applied in which the proportion of restraining bromide was greatly increased, with the view of retarding the action of the solution, and giving the plate time to acquire the necessary amount of density. Indeed, if we were to add a sufficient amount of the latter salt, the developing action would entirely cease. And it should also



be noted that when frequent additions of ammonia have to be made, a certain proportion of bromide should be added also, say in the proportion of 1 to 4, or general fog may result.

The foregoing instructions, if carefully followed, although they constitute merely a tithe of what might be written upon the subject, should be sufficient to enable the reader to grasp the general principles involved and enable him to turn out a satisfactory negative.

Although I have recommended the reader to use for his early experiment the pyro developer, it should be mentioned here that there are several other alternative methods which may be employed. The oldest of these is that known as the ferrous oxalate method. I do not, however, propose to describe it in detail here, as it does not, in the hands of a beginner, allow so much latitude in exposure as some other methods do, and it will moreover be necessary to fully deal with it when we learn how to print upon bromide paper.

The hydroquinone developer has become a great favourite with amateurs, probably owing to the fact that all the chemicals of which it is compounded may be dissolved together and used in one solution, and because it is a very cleanly developer to use, in that it does not cause the hands to become stained. The last-named property is, to some extent, an advantage, particularly if the operator be inclined to be careless in his manipulations, but to make it a practice to use a "one solution developer" is a system which cannot be too strongly condemned. Having referred to the advantages of hydroquinone, it is only right to point out its chief defect, which is an almost unavoidable tendency, at any rate in the hands of beginners, to produce negatives of such a character that hard prints result. It is, in fact, difficult to avoid getting undue contrast in negatives so developed, and it is for this reason that I do not recommend its use for ordinary negative work, although for other purposes, such as the production of transparencies, the making of lantern slides, and for copying engravings where density and clearness are essential conditions, it probably has no equal. I have condemned the very general practice of making it up in one solution, for the reason that so doing greatly lessens the control which the user would otherwise have over its action; but there is no necessity to so use it, and in the formula which has been given we shall employ two solutions. No. 1, containing the hydroquinone, is the true developer, and No. 2 the accelerator. For correct exposure, equal parts of 1 and 2 are taken, further additions of No. 2 being made in the event of the plate being under-exposed. If, on the other hand, the plate is found to be over-exposed, the normal developer is simply diluted with an equal bulk of water and more time allowed. Full exposure always gives the best results with hydroquinone. Under-exposure generally results in negatives of a character which is spoken of among photographers as "soot and whitewash." There will be found very little tendency to fog when using hydroquinone, unless the plate has been very considerably over-exposed, and the fact should also be borne in mind that it acts more slowly than does pyro, and the time occupied in development is usually considerably longer.

A developer of still more recent origin, the application of which to photographic purposes is due to Dr. Andresen, is the substance which has been called eikonogen, and, although, up to the time of writing, it has not been very generally adopted, yet the results obtained from it are exceedingly promising, and it would seem to have a great future before it. The chief drawback to its employment lies in its comparative insolubility, this property rendering it a matter of impossibility to prepare the developer in a concentrated form. Like hydroquinone, it acts somewhat slowly on the plate, but there the resemblance ceases, for, instead of producing strong, vigorous negatives, with a

tendency to hardness, the characteristics of negatives developed with eikonogen are a remarkable amount of fine detail, combined with great softness and an even gradation. It has been suggested to utilise the markedly different tendencies of the two developers by combining the two substances in one solution, so that the advantages of each may be obtained. The following formula, due to Mr. W. H. Walsley (Philadelphia), will be found to give good results: Solution No. 1, sulphite of soda 240 gr., soda carbonate 120 gr., distilled water 6 oz. Solution No. 2, eikonogen 100 gr., hydroquinone 80 gr., distilled water 6 oz. To make a developer of normal strength equal parts of these solutions are mixed together, 6 parts of water being added. In cases of over-exposure the proportion of No. 1 may be reduced with advantage.

The following is a good formula for an eikonogen developer: Dissolve in 15 oz. of distilled water  $\frac{1}{4}$  oz. of eikonogen, 1 oz. of sulphite of soda, and 4 gr. of bromide of potassium; label this No. 1. In 10 oz. of distilled water dissolve 1 oz. of carbonate of potassium; label No. 2. For a normal developer mix the solutions in equal proportions. The detail-giving properties of this developer are very great, and it is most valuable for developing under-exposed plates.

In concluding this chapter upon development, I cannot, perhaps, do better than warn the reader against the common practice of trying the plates of first one maker and then of another. If this be done, success will seldom be attained, for if it be imagined that one dry-plate is very much like another the assumption is an erroneous one, the fact being that, although nearly all commercial dry-plates are of good quality and thoroughly reliable, each particular make possesses characteristics entirely its own, a knowledge of, and mastery over which the photographer can only acquire by the experience gained by long use. Therefore, having chosen a good make of plate, the reader should studiously avoid all temptation to try rival makes until he can, with reasonable certainty, produce a good negative.

(To be continued.)

The art and science lecture on March 1st, at the South Kensington Museum was delivered by Mr. G. V. Boys, on "Electric Spark Photography as applied to flying Bullets and other rapidly-moving Bodies." The spark is generated by the discharge of a Leyden jar, there being in the conductor from it two breaks, which together the electric fluid has not pressure sufficient to jump. But when the bullet or flying object makes contact with one the spark is instantly emitted from the other. As then the duration of this spark may be even much less than the one-millionth of a second, it is far and away in excess of the speed of the bullet, which consequently appears to be stationary, and a very precise view is accomplished by the camera. This view records the form of the bullet, its direction and inclination, the balling up of the air in front of it, the long-drawn-out vacuum, and the various other vortices and contortions of the surrounding atmosphere through which it is passing. Photographs of actual experiments were then enlarged into gigantic pictures on the screen, and made perfectly clear in all their singular details to the audience. Some of the most remarkable were those which showed the passage of a bullet through a sheet of plate glass. In one the head of the bullet was seen protruding, carrying what seemed to be a dark cloud of lead vapour, caused by fusion in the impact, and another showed the storm of dust from the smashed up glass; whilst others gave views of the strains set up in the glass plate around the clean perforation the bullet had made. Clean perforations of this nature have long been known, but the reason is rendered additionally clear in that the speed of the bullet exceeds the speed at which cracks in the glass can progress. The result, consequently, is that the round portion of glass in front of the bullet is locally pounded into powder before the exterior portions have time to start into motion. Some notice was also taken of the effects of the dust and vapour envelopes of the bullet in the transmission of sound, and also how, by a series of differently-inclined diagonal perforations through the bullet, and the capacity of light being seen through them, the effects of rotation might be observed, and details of the differences of spin effected between that given by the barrel and those produced in the rapid passage of the missile through the air.



## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER XIX.

#### STAND CAMERAS AND HAND CAMERAS.

THE camera—in its simplest form—is nothing but a “dark box,” having a lens at the one end, and a contrivance for holding the sensitive plate at the other. But it is frequently necessary to alter the distance of the plate from the lens—to “focus,” as we say—and so some contrivance to admit of this being done is necessary. Further, we do not wish to return to the dark-room with the camera every time we want to change a plate; and so some sort of case or holder for the plate is necessary, by which it can be removed from or placed in the camera; such a plate-receiver is called a “dark-slide.” It is further a convenience to be able to see the exact view which will be secured by the sensitive plate; and for this purpose a piece of ground glass—the “focusing glass”—is fitted to the back of the camera. It must, of course, be removed before the dark-slide is placed in position.

*Classification of Cameras.*—Considered with reference to instantaneous work, cameras may be classed according as to whether they are to be used upon a stand or tripod, or held in the hand. For large cameras the former method only is applicable. But the difficulties in instantaneous work increase so greatly with increase of size that we may say at once that we consider the whole-plate ( $8\frac{1}{2}$  by  $6\frac{1}{2}$  in.) the largest size which can be advantageously employed for general work of this class. And for the same reason we find that hand-cameras are best confined to either the quarter-plate ( $4\frac{1}{4}$  by  $3\frac{1}{4}$  in.) or the 5 by 4 size.

Still, by the aid of assistants, it is quite possible to use even a whole-plate camera without a tripod. We well remember “working” Rhyl sands one Bank Holiday with a large camera wrapped in a black cloth, the lens just protruding, and with a young assistant strolling along on either side. When an exposure was to be made, the assistant on the right hand drew out the cover of the dark-slide; and at the word “Now,” the assistant on the left squeezed the ball of the pneumatic release.

*Cameras on Stands for Instantaneous Work.*—For instantaneous work where a high degree of speed is necessary, and where matters can be arranged beforehand, it will be found by far the best arrangement to use the camera upon a stout and firm tripod. The tripod should be of the sliding form, with each leg in two parts only, and the tripod top should be large and well padded with baize or velvet. By suspending a string bag (a cabbage net answers well) filled with stones, from the tripod screw, extra rigidity can be secured in case of wind, etc.

The first photographic camera—that used by Daguerre and by Talbot in 1839—consisted of one square wooden box sliding into another. About 1855 Captain Fowke introduced the bellows camera, a “concertina” leather folding arrangement; and a little later Mr. Kinnear showed that by making the bellows tapering or conical, a lighter and more compact instrument was obtained.

Between Daguerre’s camera and a modern instrument, such as, for example, Watson’s “Acme,” with aluminium fittings, there is as much difference as between a cart-horse and a Derby winner; yet each is capable of doing good work. For such work as we are now discussing, we prefer a strong “square” camera, focussing at the back by a rack and pinion, to the very light, long-focus, tapering bellows camera which is so much in favour among tourists. We should, in brief, select such a camera as Lancaster’s “Im-

proved Special,” or Watson’s “Premier,” or the Optimus “Portable.” For size, we should prefer the half-plate, fitted with a rectilinear lens of about 7 in. focus, and working at  $f/8$  or thereabouts.

For the next size larger camera ( $7\frac{1}{2}$  by 5), a lens of 9 in. focus; and for the whole-plate camera a lens of 11 in. focus will be found most suitable. The subjects and kind of instantaneous work best done by a “camera on stand” will be treated of later on.

*HAND-CAMERAS.*—It is pleasant to find that the term “detective” as applied to cameras used in the hand is fast falling into disuse. Few, if any, photographers use their hand-cameras for “detective” purposes, and the term tended to bring this fascinating branch of the art into disrepute.

Although it is doubtless true that cameras were occasionally used in the hand from the early days of photography—say back as far as 1860—yet the first man who seems to have constructed a camera to be used entirely without a stand was Thomas Bolas, who described\* such an instrument (which he styled a “detective camera”) early in the year 1881. In this instrument most of the features of the hand-cameras of the present day were anticipated.

Looking through the “Christmas Annuals” lately published, we find particulars announced of nearly sixty hand-cameras, by about half that number of makers. To describe each of these would be clearly impossible, and all that we can do is to attempt to classify them, and to point out the features of each type.

*Cameras for Films.*—Some celluloid films are so thick that they readily lie in the dark-slides or sheaths just like glass plates, though it is best to put a piece of cardboard behind them to keep them steady, and to hold them in position. Films too thin for this can be cut to size and placed in “film holders”—light frames which stretch the films and hold them tightly, and which can be fitted into any dark-slide just like glass plates.

But films are used to the best advantage in roll-holders—contrivances which then replace dark-slides altogether. One roll-holder usually contains a sufficient length of film to allow for from 48 to 100 exposures; while the total weight does not exceed that of three or four dark-slides filled with glass plates. Among cameras intended especially for films, the Kodak of the Eastman Co. reigns supreme. It is made in eight sizes, giving pictures varying from  $2\frac{1}{2}$  in. in diameter (circular picture) to 7 by 5 in. (rectangular). The appearance of the six smaller sizes is simply that of a small black leather case; but the two larger sizes open out for focussing. The Kodak is a most excellent camera for the traveller, and for the tourist who knows but little of photography, but who yet desires to bring back with him reminiscences of his wanderings. Two advertisements made by the Eastman Co. have gained a world-wide publicity:—“Photography reduced to three motions:” and, “You press the button; we do the rest!” But although some fun has been extracted by photographers from these statements, there can be no doubt that the sixty thousand Kodaks now said to be in existence have enlisted many recruits for photography, and have given intense pleasure to the great majority of their users.

The “three motions” referred to as all that need be done to take a picture with a Kodak are—(1) pulling a string—this sets the shutter; (2) turning a key—this winds a part of the sensitive film from one spool to another; (3) pressing a button—this makes the exposure. The lens (except in the two largest sizes) is of the “fixed focus” variety. As a testimony to the value of the Kodak we may state the case

\* See *Photographic News* for 1881, pp. 45, 231, 532.



of a personal friend who has just returned from a trip round the world. He had never taken a photograph before leaving England, and yet he brought back some hundreds of good film negatives, which have proved most valuable in illustrating the books and lectures in which he has described his experiences.

Another and very pretty little hand-camera fitted with a roll-holder for films is the "Luzo" of J. Robinson and Sons.

*Adaptation of Ordinary Cameras for Use in the Hand.*—Any small camera—a quarter-plate, or 5 by 4 for preference—can easily be adapted for use as a hand-camera. The camera should be fitted into a small black wooden box; a hole in one end of which allows the lens to peep out. By boring a hole in the bottom of the box, the tripod screw can be used to hold the camera firmly in its place. The dark-slides are best carried in the pocket; although room can be left for them in the box if desired. A hole cut in the side of the box allows the introduction of the finger for the purpose of discharging the shutter. A square-topped portmanteau might be adapted as a camera case, in lieu of a box; or a leather or cardboard case might be specially made. For mere experiment, or in an emergency, the camera may indeed be used simply wrapped up in the focussing cloth. All such experiments are, however, nothing but makeshifts; and although useful enough in an emergency, they are not to be recommended now that hand-cameras proper have attained such a high degree of perfection.

The remark made in the last sentence does not apply, however, to certain hand-cameras which are specially constructed for use in a box or cover when so desired. Such, for example, are the Aptus Universal of Sharp and Hitchmough, Perken's Optimus, and the Stereoscopic Co.'s Dispatch.

*HAND-CAMERAS FITTED WITH DARK-SLIDES.*—The use of dark-slides in a hand-camera gives the power of using a ground-glass focussing screen; for time exposures this is very useful, as the image can be seen of full size and studied at leisure. It also allows to use at will, plates of varying rapidities; for with three double dark-slides, for example, we may load them, if we please, with six different makes of plates. The camera can also be opened freely to remedy any defect in the shutter, etc.; and if one plate should chance to go wrong, or stick, or fall out, it does not damage the rest, nor interfere with the working of the instrument.

On the other hand, the use of dark-slides adds to the bulk and (for really good slides) to the cost of the camera. Moreover, the camera has to be so frequently opened—to reverse the dark-slide, pull out and then close slide-shutters, etc.—that the attention of the "public" is certain to be drawn to the manipulator. Lastly, it is impossible to expose plates quickly, or in rapid succession, when dark-slides are used.

Among the makes of hand-cameras fitted with dark-slides which are now upon the market, we may name Ross's New Portable Divided Camera, and also their Portable Collapsing; the Optimus Detective of Perken, Son, and Rayment; the Vesta of Adams and Co.; Watson's Detective; Shew's Eclipse; Loman's Reflex; Sharp and Hitchmough's Universal; the Beck (Messrs. R. and J. Beck); Griffith's Patent Detective; Tylar's Perfect, which is fitted with twelve metal dark-slides; Baird's Hand-Camera; Turnbull's Cyclist; the London Stereoscopic Co.'s Dispatch, Artist, and Twin-lens Artist; Chadwick's Practical; and the Platinotype Co.'s Key.

*HAND-CAMERAS FITTED WITH CHANGING BOXES.*—A changing box is a contrivance something like a thick dark-slide, and which permits the transference of each plate, after exposure, from one end of the box to the other. This form of

plate-reservoir is used in Lancaster's Snap-Shot and Long-Shot hand-cameras; and in Shew's Combination, and Eclipse.

*HAND-CAMERAS WITH BAG-CHANGING ARRANGEMENT.*—In this pattern the plates, usually twelve in number, are held separately in thin iron sheaths at the back of the camera, and are covered over by a bag of some light flexible material (Suède leather answers well) impervious to light. To change a plate, part of the camera-case is opened (it either slides or is hinged), and the front sheath (facing the lens) containing the exposed plate is gripped by the finger and thumb of each hand (the sheath is readily felt through the thin material of which the bag is made), raised, moved backwards, and pushed down *behind* all the other sheaths.

The sheaths are all pressed forward by a spring at the back, and are then kept steady, and the front plate "in register," or rather in focus. Usually, also, a second spring, or a lever, is so arranged as to lift the front plate, and so enable it to be more readily taken hold of by the fingers.

This "bag-changing" method is a good plan, for it is cheap, and takes up very little room. On the other hand, it requires care and neatness of manipulation; and the camera requires to be opened every time a plate is changed (thus exposing to bystanders the "secret of the prison-house.") In Messrs. Underwood's City hand-camera the bag takes the form of a light bellows, which opens underneath the camera. Other makes of this pattern are Perken's Minimus; Swift's Memorandum (the invention of Mr. Chapman Jones); Talbot and Eamer's Talmer; the Adams hand-camera; and Rouch's Eureka.

*HAND-CAMERA WITH "AUTOMATIC" CHANGING ARRANGEMENT.*—This is the pattern which appears to have found most favour with the inventors and with the public of the present day. The plates—in number from six to twenty-four, though *twelve* may be taken as the standard—are arranged in sheaths, one behind another, at the back of the camera, all the plates facing, of course, towards the lens. The front plate having been exposed, the question is how to dispose of it without opening the camera, so that the next plate may be ready for exposure, and then the next, and so on.

(a) *Lever Changers.*—In Kerr's patent (made by Adams and Co., and with which we have done much work) the plate is exposed in a lower chamber or division of the camera, and is then caught by a lever (the handle or bend of which projects through the side of the camera) and raised out of the way into another chamber. In the Ideal and the Miall hand-cameras we get the same "lever-changing" arrangement, but it is simpler, and the plates move from an upper to a lower reservoir. Lancaster's Rover and Humphries' Quadrant are on the same principle.

(b) *Gravity Changers.*—The force of gravity causes all unsupported bodies to move towards the centre of the earth. Advantage is taken of this in many forms of hand-cameras to effect the changing of the plates either by inverting the camera or by removing a support, the result being that the plate falls from one part of the instrument to the other. We have here a fruitful source of dust, with the consequent pin-holes; moreover, breakage of the plates is possible. Still, the method is so cheap and so convenient, and it admits of such *rapid* changing of the plates, that it continues to grow in favour.

Two varieties of "gravity changes" can easily be distinguished. In the first the plates are arranged in grooved boxes, and they pass from one groove to another, either before or after the exposure is made. Examples are



Perken's Optimus Magazine, Fallowfield's Facile, Marion's Radial, the Griffin, the London Stereoscopic Company's Graphic, etc.

In the second form of "gravity changer" there are no grooves in the reservoirs or plate boxes. The plates are stored in the upper part of the back of the camera, being pressed forward by a strong spiral spring. As each plate is exposed it is released, and falls down into the lower part of the camera. Cameras of this class are Miller's Adelphi, Houghton's Automatic, the Swinden and Earp, etc. One camera on this plan which unites simplicity with efficiency in a marked degree is Messrs. Philip Harris and Co.'s Cytox hand-camera. In this the plates stand up about one-eighth of an inch above the sheaths; after exposure, the simple pressure of a button on the top of the camera causes each plate to fall (its descent being regulated by pins projecting from the sheaths) to the lower part of the camera. The shutter is excellent, having a "protector" which obviates any necessity for capping the lens while the shutter is being set. In an actual trial we succeeded in correctly exposing twelve plates in fifty seconds.

We have now described seven methods by which a sensitive surface (film or plate) is held in position at the back of the camera; and is then—after exposure—removed to make room for a fresh surface. But it must not be supposed that each make of hand-camera named is rigidly confined to the one method of plate changing which we have associated. Camera makers are usually accommodating men, and in a camera "built to order" they can usually vary the "standard pattern" of plate-changing so as to suit the purchaser. Moreover, it is possible to have the camera made so as to be available for more than one of the methods described. Thus in cameras meant for use with dark slides or with changing boxes, it is easy to have them adapted, not only for both these methods, but also to take a roll-holder for films as well.



**Dallmeyer's Tele-Photographic Lens.**—We understand that Mr. T. R. Dallmeyer exhibited and described the improvement of this lens, printed in our last, before the Camera Club on 10th inst.

**The next meeting of the Bristol and West of England Amateur Photographic Association** will be held at No. 28, Berkeley Square, at 7.30 p.m., on Friday, April 8th. Mr. Chas. Hastings will deliver his lecture on "H. P. Robinson and his Work," illustrated by lantern slides.

**In answer to a correspondent,** we stated in a previous issue that Gihon's Opaque could not be obtained in England. Messrs. George Mason and Co., of 180, Sauchiehall Street, Glasgow, write to inform us that they hold stocks of this article, and will be glad to supply any one's demands.

**Hume's Cantilever Enlarging Apparatus.**—Mr. Hume is shipping to China the largest size "Cantilever" he has yet made, viz., with 13in. aperture condenser to cover fully a 10 by 8 plate. It is a magnificent instrument of the highest finish in the "Indian" pattern, brass bound, on gun-metal feet on base, sliding on rails 6ft. long. The brass draw-tubes look very massive and rigid, being 1½in. diameter and 4ft. long. The movements of the relative parts provide for the making of pictures from one to ten diameters of the 10 by 8 plate. It will thus make enlargements up to 8ft. The cost is £50.

The first outward and visible signs of the progress made by the Warwickshire Photographic Survey will soon be on view to the public at the Birmingham Art Gallery. A large number of photographs have been received, and a committee of selection, on which Mr. Jethro A. Cossins, a well-known local architect, and Mr. Whitworth Wallis, curator of the Art Gallery, are included, is now at work choosing 500 of the best pictures for exhibition. These will be hung at the Art Gallery at an early date, and will be afterwards handed over, together with the works at present withheld, to the authorities of the city and preserved at the Reference Library. In the collection are to be noted records of interest from the elaborate halls of Compton Wynyates, Castle Bromwich, and Warwick Castle to the pillory at Coleshill, and the rain-water cistern at Pooley—from ecclesiastical architecture such as the Beauchamp Chapel at Warwick to the picturesque mud hovels still inhabited at Wolvey Heath.

## Developing Collodio and Gelatino Chloride Prints.

WE referred on page 200 to the development of gelatino-chloride paper after a faint image had been impressed in the usual way in the printing frame, and we now give the translation of an important paper on this subject, by Herr E. Valenta, which appears in the current number of the *Photographische Correspondenz*.

Of the direct print photographic papers used at present the collodio and gelatino chloride papers are the most sensitive; they print, indeed, twice or three times quicker than the sensitised albumenised paper. In spite of this, however, it appears desirable under certain conditions, e.g., on very dull winter days, to still considerably shorten the duration of printing with this paper, in which one must not be regardless of the fact that if such experiments are to be of any value, the result must be such that the prints thus attained must not be inferior in warmth and richness of tone to good albumen prints.

These experiments bear especially on the chemical development of chloride of silver prints on photographic papers which, in fact, give very good results with alkaline hydroquinone, ferrous citrate, etc.; the commercial emulsion papers hitherto used for this purpose are, however, prepared with excess of alkaline chloride and are not suitable for direct printing-out, but only for developing.

Ordinary printing papers which are actually intended for printing out, and contain an excess of soluble silver salt (citrate, tartrate, acetate, etc.), can be used for the preparation of prints by developing, without being able, with correct manipulation, to distinguish the results from those obtained by a simple printing-out process.

The advantage of using a good developing bath with faintly printed pictures is not to be undervalued:—(1) One can reduce the duration of printing to a quarter or a fifth of the time necessary for complete printing-out; (2) by the aid of magnesium light (1 to 2 grm. of magnesium powder) obtain, on collodio chloride of silver paper, prints capable of being developed to a warm tone; (3) by the aid of certain developers certain tones can be obtained which cannot be attained by direct printing; (4) it is possible with the aid of the developing process to obtain finished prints from extremely faint impressions as well as from almost finished prints.

Experiments to find developers for the papers intended for printing-out, have up to the present time been few, and most of them are limited to the use of gallic acid as the developing agent. Such formulæ have been suggested by Liesegang,\* Lebedzinsky,† Legros,‡ and others.

"Der Amateur Photograph" (1892) also directs attention to a similar process which recommends as a developer for prints on aristotype paper of brief exposure time, a concentrated solution of gallic acid neutralised with carbonate of potash. These developers act on the same lines as the gallic acid developer used thirty years ago for salted paper enlargements.

Developers containing gallic acid are all more or less easily spoiled, and frequently give slimy deposits on the prints, and cannot be used for several kinds of paper at all. I obtained also with the gallic acid developers, with the papers for which they are suitable, tones which I did not like.

These reasons made me try for a developer which did not show these disadvantages, which would keep several days and could be used for most of the commercial printing-out papers, and of which I have tried Kurz's Celloidin, Obernetter's, Buhler Portrait and Mignon, Lumière's "papier au citrate d'argent," and several others of unknown make.

I first tried the alkaline developers. These proved quite useless; the ordinary alkaline developer gave, even with very great dilution, a more or less quick blackening of the whole paper. An

\* "Photo Archiv," vol. 33, p. 31:—Gallic acid, tannin, acetate of soda and water.

† "Sposob uzygia Papieru Kolodijonowego emulsiyjnego." Warsaw, 1890:—Distilled water, 1,000; gallic acid, 4; citric acid, 6 sodium acetate, 20; sol. lead nitrate (1:10), 15 to 20.

‡ "Bulletin de la Société Française," 1891, p. 152.



exception to this was the hydroquinone and soda developer recommended by Baron von Hübl for his dry collodion plates.

This is composed as follows :—

|                     |     |     |     |           |
|---------------------|-----|-----|-----|-----------|
| A. Sodium carbonate | ... | ... | ... | 40 parts. |
| Sodium sulphite     | ... | ... | ... | 60 "      |
| Potassium bromide   | ... | ... | ... | 4 "       |
| Water               | ... | ... | ... | 200 "     |
| B. Hydroquinone     | ... | ... | ... | 10 parts. |
| Alcohol             | ... | ... | ... | 100 "     |

For use, mix A, 10 parts, with B, 3 to 4 parts, and 40 parts of water.

This gives, when mixed with a sufficient quantity of bromide of potassium solution, useful results on Kurz's Celloidin paper. Still, even this proved that with very faintly printed impressions, the development could not be carried to an end without the formation of a leather-coloured fog.

For these reasons I turned to the use of the acid developer, and actually the hydroquinone intensifier for collodion plates recommended by Hübl induced this series of experiments.

This consists of a solution of silver nitrate and a solution of hydroquinone 5 parts, water 500 parts, and citric acid 2.5 parts. The latter solution used by itself acts as a developer for celloidin paper. Further experiments showed the advantage of an addition of sodium sulphite and were the cause of the arrival at the following formula, for an acid hydroquinone developer for developing pictures on faintly printed celloidin and aristo papers :

|                    |     |     |     |     |            |
|--------------------|-----|-----|-----|-----|------------|
| A. Hydroquinone    | ... | ... | ... | ... | 10 parts.  |
| Alcohol            | ... | ... | ... | ... | 100 "      |
| B. Sodium sulphite | ... | ... | ... | ... | 100 parts. |
| Water              | ... | ... | ... | ... | 500 "      |
| Citric acid        | ... | ... | ... | ... | 5 "        |

Fifty parts of solution A to be mixed with 50 parts of B, and 1,000 parts of water added.

The developer works clear, if slowly. The violet tone of the imprinted paper turns to a yellow brown; development is complete in from 10 to 15 minutes, according to the extent of printing out. The print is then washed for a short time with water in order to remove the adhering developer, and then toned and fixed in the combined toning and fixing bath.

I used for this purpose the combined bath recommended by Lumiere for his "Papier au citrate d'argent." This is composed of—

|                                   |     |     |     |     |            |
|-----------------------------------|-----|-----|-----|-----|------------|
| Water                             | ... | ... | ... | ... | 500 parts. |
| Hypo                              | ... | ... | ... | ... | 200 "      |
| Sulphocyanide of ammonium         | ... | ... | ... | ... | 25 "       |
| Alum                              | ... | ... | ... | ... | 30 "       |
| 10 per cent. sol. acetate of lead | ... | ... | ... | ... | 40 "       |

The solution is heated on a water bath to 60° C., by which means a quicker settling of the precipitate formed is attained. It is then filtered and 100 parts of the same mixed with 50 parts of water and 10 parts of a 1 per cent. solution of chloride of gold. In this combined bath the yellow brown developed prints assume a yellow tone, which very soon turns into brownish red, and into a beautiful deep purple brown. The toning and fixing is complete in ten minutes. The pictures should be then washed in running water and dried. After drying no change of tone shows itself.

If one replaces the hydroquinone in the above formula by pyrocatechin, one obtains a good developer that will keep, which works clear but slowly, and gives prints of a rather more violet shade than the first developer.

The hydroquinone developer just described, as well also as the pyrocatechin, is very suited for developing prints on some of the commercial papers, whilst the same gave less satisfactory results with others. I instituted therefore with other developing substances further experiments, and the result was a developer of general application for all commercial papers. The following pyrogallol developer is the one, and consists of—

|                 |    |    |    |    |              |
|-----------------|----|----|----|----|--------------|
| Water           | .. | .. | .. | .. | 1,000 parts. |
| Sodium sulphite | .. | .. | .. | .. | 100 "        |
| Pyrogallol      | .. | .. | .. | .. | 10 "         |
| Citric acid     | .. | .. | .. | .. | 11 "         |

The ingredients should be dissolved in the order given, and the clear, almost colourless solution immediately used.

The developer works clearly with the different papers, and develops quickly. It becomes only faintly coloured by longer use, and will keep in the used state tolerably long.

The citric acid acts here, as in the previously described deve-

loper, as a restrainer, and causes the print to remain clear. The development is finished in a few minutes in most cases, and the prints, after being washed with water, assume in the combined toning and fixing bath pleasing warm tones, from brownish red to purple red.

Celloidin paper, made by Kurz, of Wernigerode, should be placed in the developer without damping. The image develops, even when faintly printed, very quickly and clearly. The colour of the print turns from reddish violet to yellow red, and finally into yellow brown.

When development is completed the picture should be placed in a dish placed ready filled with pure water, allowed to remain in the same whilst rocking, and then laid in the above described gold bath, where it should remain a longer or shorter time according to the tone desired.

Buhler's Mignon paper, Obernetter paper, or portrait paper, aristotype as well as Lumiere's "papier au citrate d'argent," were washed for a short time in a dish with a little clean water, then treated exactly as described above, and especially the Mignon paper gave pleasing tones. Only with these varieties of paper must extreme care be taken that any air bubbles, which adhere tolerably firmly, are removed.

With all the above named kinds of paper, artificial light may also be used with good results for the first printing; for instance, two or three grammes of magnesium powder burnt in any handy flash-lamp at about 40 c.m. distance are sufficient with the help of the above described pyro developer to give a beautiful picture.

The method of developing with the above developers appears very advantageous for the preparation of pictures on glass, such as transparencies or opals, or on porcelain, which supports, as is well known, are prepared with similar emulsions to the above named paper, and intended for printing-out.

The firm of Schattera, of Vienna, also use this my method for the development of chloride of silver pictures upon glass, after I had told them my receipt.

In conclusion, I will now name the experiments which I made with my salted resin paper. This if it had been silvered in the way recommended cannot be used as a developing paper. From a suggestion of Dr. Eder, who has helped me in my work both with advice and actual assistance, for which I can only express my most hearty thanks, I tried sensitising paper with a solution of 12 parts of nitrate of silver, 100 parts of water, and 10 parts of citric acid instead of with a 12 per cent. nitrate of silver solution. The salted resin paper sensitised by floating for three minutes on the former solution was dried, and now faintly printed so that scarcely the outlines of the image were visible. These prints we now placed in the pyro developer as given above and easily developed, treated in the combined toning and fixing bath, and gave prints of pleasing brownish-violet tone, whilst in the ordinary fixing bath they assumed a reddish-brown colour and the whites were less pure.

The Mignon paper as well as the resin salted paper ought to be very well suited for the preparation of enlargements with the employment of a strong source of light, such as the Solar camera or electric light. These experiments will be undertaken at no distant date.

## Reviews.

*The Art of Retouching Photographic Negatives, and Clear Directions how to Finish and Colour Photographs.* By Robert Johnson. Third edition. Published by Marion and Co., 22 and 23, Soho Square, London, W. Price 2s.

This is well known as one of the leading works on the subjects of which it treats. The book is divided practically into three sections; the first devoted to the consideration of retouching, the second to colour and the application of the same to photographs, and the third to practical hints on composition and working. The book is well printed, and contains numerous illustrations which add point to the text and carry conviction to the readers that it is a practical book by a practical and practised hand.

A brief catalogue of the necessary materials for retouching, colouring, and general work, supplied by the publishers, is included.

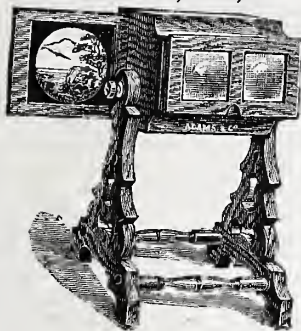
The largest sunspot ever photographed at Greenwich since the record at the Royal Observatory began in 1873, was that which was observed February 8th—18th, and found to be nearly 100,000 miles in length. This spot will probably come into view again, after being carried by the sun's rotation round his further side.



## Apparatus.

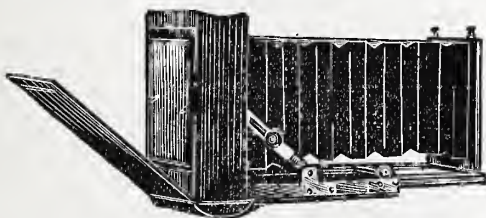
### ADAMS' BINOCULAR PANTOSCOPE.

Adams and Co., of 81, Aldersgate Street, E.C., and 26, Charing Cross Road, W.C., have introduced a binocular pantoscope, which is considerably less tiring to the eyes than the monocular, and an added stereoscopic effect is obtained. Another effective addition is an arrangement fitted to the body of the instrument which enables one to obtain various tints on the slides which add considerably to the resulting picture. In its present form it will be more than ever a welcome addition to the drawing-room or reception-room table.

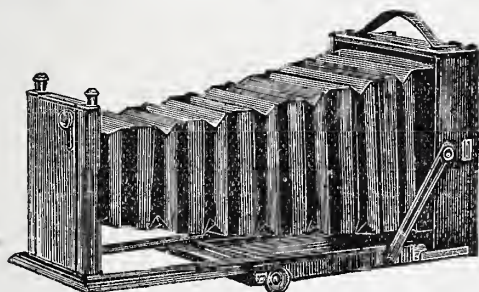


### BRAINE'S CAMERAS.

Messrs. James Braine and Sons, of 22, Bedford Terrace, Moray Road, Holloway, N., have forwarded for our inspection a novelty they are introducing in the shape of a "Book" camera, shown in the accompanying diagrams. Externally it takes the



appearance of a handsome morocco-covered book and measures 6 by 5½ by 2 in., and weighs 1 oz. It has a swing back, rising front, double extension, and rack and pinion. It is adapted for taking pictures either way, or in the hand, or on the tripod, and would be a convenient apparatus for a cyclist or tourist. The price is reasonable and includes three double dark slides.

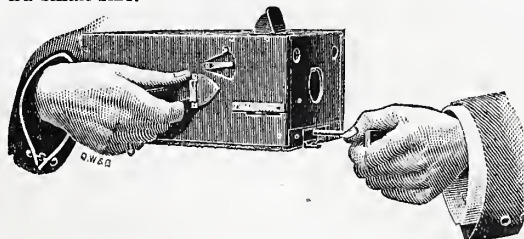


This firm have also introduced a very good cheap camera, shown in fig. 3, with double extension, rising front, swing back, and may also be had with R.R. lens and tripod, forming, at £3 16s., a very reasonable set of good quality.

### THE "SHUTTLE" HAND-CAMERA.

Geo. Houghton and Son, of 89, High Holborn, have submitted to our notice one of their latest hand-cameras, the "Shuttle," a very neat little hand-camera of exquisite finish and workmanship, which measures only one inch larger each way than the plate, the length being determined by the focus of lens, or 9½ by 5½ by 4½ inches. The plates are changed by merely pulling out a lever in the front of the camera, as shown in the diagram, and pushing it home; the shutter being set by the same operation. Without plates the camera weighs 3 lbs. A lens shield is provided, and the shutter may be reset, if accidentally released, without changing a plate. The lens is a specially selected R.R., fitted with revolving stops, and a small scale enables one to set to the varying distances, a dial on the top of the camera also allowing the alteration of shutter speed. Two finders are provided, and the camera may be had covered in leather, or in a case, or with any

special lens if desired. We saw some very fine specimens of work done with the camera, and it is one which is likely to find considerable favour with ladies, cyclists, and tourists, from its lightness and small size.



Messrs. Houghton and Son have also fitted up new show-rooms at High Holborn, and will be pleased to show anyone the stock of novelties they have. They are introducing a new form of tourist camera with all the latest improvements of exceptionally light weight, which we shall hope to notice in a week or two. This firm keep a full line of all the leading requisites, and will be pleased to forward their new catalogue as soon as it comes from their printers' hands.

## Catalogues.

**PHOTOGRAPHIC LENSES.** The Bausch and Lomb Optical Company, Rochester, N.Y., and New York City, U.S.A.

A well printed and illustrated price list, containing the famous Alvan G. Clark lenses and full information as to Zeiss' new lenses, for which this firm are the American licencees. A useful article on the selection of lenses is included.

**PHOTOGRAPHIE, LITHOGRAPHIE, TYPOGRAPHIE.** Verzeichniss von ältesten und neueren Buchern, Max Harrwitz, Potsdamerstrasse 41a, pt.

A very useful catalogue of modern and old books treating of photography and kindred subjects. Many old and out of print works being included will make this welcome to all librarians, both private and public.

**J. MARTIN AND CO.,** 3 and 4, Park Villas, and 3, Grove Road, New Southgate, London, N.

This firm have sent us a very complete price list for printing in all its branches and all processes, and also a list of their charges for copying, developing, intensifying, etc. We have had several opportunities of seeing work done by this firm and can testify to the excellence and care exhibited.

**DR. WINZER AND CO.,** Photochemisches Laboratorium, 7, Waisenhausstrasse, Dresden.

A handsomely got up catalogue of nearly 200 pages, containing every requisite for practical work, including also several English firms' apparatus, plates, etc.

**R. T. ADAMS AND CO.,** 90, Hatton Garden, E.C.

A useful price list of all the leather and canvas camera cases made by this firm, and the prices are exceedingly moderate and worth attention.

**REYNOLDS AND BRANSON,** 14, Commercial Street, Leeds.

"A handy guide to photographic requisites" stocked by this firm and containing all that is required by the most energetic of workers.

**"Jahrbuch der Chemie."**—H. Bechhold, Neue Krampe 21, Frankfurt A.M., will shortly publish a new book, with the above title, which ought, judging from such names as Meyer, Nerst, Kruss, Bischoff, Rohmann, Beckurts, Haussermann, Durre, Marcker, Benedikt, to be of great value. We note that Prof. Dr. Eder will contribute that portion devoted to photography.

**The Croydon Camera Club** held a dinner on 17th inst. at the Greyhound Hotel, Mr. H. Maclean, F.G.S., in the chair, Mr. C. F. Oakley occupying the vice-chair. Mr. Packham proposed "The President" and "Vice-President," and the Editor of the AMATEUR PHOTOGRAPHER the toast of "The Club." Vocal and instrumental music was given during the evening.

In taking the photographs of the new star in Auriga by Father Denza, at the Vatican Observatory, the telescope was moved in declination slightly between each exposure, and five images of the nova were obtained on each of the two negatives. On February 7th the star is stated to have been undoubtedly of the 5th mag., and its position measured by the meridian instrument of the observatory was R.A. 5h. 25m. 3.4s., December 30 deg. 21m. 42 sec. The images of the star are not so clearly defined on the plates as those of other stars in the same field.



## IMPERIAL DRY PLATE COMPANY LTD.

THE factory of this new Company whose advertisement appears for the first time in this issue is situated at Cricklewood, N.W., away from the smoke of London and dust of the high road, two important factors which operate disadvantageously in the manufacture of dry plates. On entering we were met by Dr. J. J. Acworth, who was for some considerable time the head of the laboratory of a large dry plate manufacturing firm. We were first of all conducted into the room devoted to the washing of the glass, where we found several hands busy in preparing and washing it for the final coating of emulsion; from thence the glass is passed into a drying-room, and then into a room where it is carefully selected, the special points being freedom from flaws, flatness, and absolute cleanliness; from here it ascends by a lift to the coating-room.

The next visit was to the room where the emulsion is made, filtered, and stored till required for use in the coating-room, where we soon found ourselves; here we see the coating machine, one of Cadett's make, in full operation. The glass is placed on one end of a travelling band and proceeds underneath the coating trough, which is actuated by a series of silver pumps, and having received its coating, is carried on towards a roller which cleans the underneath surface of the plate, and from this on to a cooling slab, where the emulsion is set by means of running iced-water. By the time they reach the end of the travelling band, another assistant is ready to remove them, place them in racks, whilst another hand places them in the drying chamber, which is heated by warm air, the aqueous vapour being drawn off by an exhaust fan and by a suitable arrangement of ventilators. The temperature of this drying chamber is kept equable and even, thermometers being placed at intervals in the walls of the chamber so that the internal temperature can be seen at a glance.

We carefully watched the action of the machine for some little time, and checking it found that the glass was passing through at the rate of 1,000 whole-plates per hour. Absolute evenness of film, freedom from bubbles, and rapidity of output are the consequence of careful arrangement and careful work.

After leaving the drying chamber the plates are passed into the cutting-room, where they are cut by special arrangement by means of which the hands of the cutters do not come in contact with the plates or films. The plates are then examined and passed in to the boxing-room, and from there into the packing-room, where they receive their final covering, and are then ready to issue to the public. Having thus seen all the practical working of coating plates, from emulsion making down to the final boxing, we pass into the testing room, where emulsion is tested prior to its being used for the plates; and from this room we pass to the dark-room, where a couple of plates were developed and fixed before us. The testing of the plates is a practical and not a theoretical one, and of far greater value to the practical worker, than any sensitometric test, as it proves the actual sensitiveness and quality of the emulsion in the camera, the place where most plates are used.

We shall shortly give results of our experimental testings of these plates, but speaking from our experience in the factory they will be found well deserving the attention of all operators, whether amateur or professional. It would be betraying the confidence of the Imperial Dry Plate Company, Ltd., if we were to divulge all that we saw and heard, but we hope later on, when the occasion arises, we shall have the pleasure of making announcements which will be of considerable interest to our readers.

## Exhibitions.

### BARROW-IN-FURNESS.

A CONVERSAZIONE and photographic exhibition was held on the 14th inst. The whole of the pictures shown were the work of the members of the photographic section of the Field Club, and seeing that the section has only been in existence for little more than a year, the excellence of the exhibition speaks volumes for the skill and industry of the members, and reflects great credit on the promoters. Two sides of the room were covered with photographs in great variety. Down the centre of the room ran a table, on which a series of beautiful transparencies and lantern slides were suitably displayed, while, here and there, lanternscopes and works of art (kindly lent by the Free Library Committee) gave variety and interest to the exhibition.

Mr. Dunlop, the Vice-President of the section, was well represented in the exhibition, he having more than thirty works, half-plate size, of views of the Lake District, Isle of Man, and Scotland, while his photographs of figures, groups, etc., show that his art does not lie in one direction. Two sheets of photographs, beautifully and artistically mounted, showing scenes in the district, are charming pictures, and were generally admired. It struck one also that as photographs these were of good quality. Mr. R. A. Stamp, besides sending smaller contributions, was represented by a series of eleven enlargements on bromide paper, those of greatest merit being "Bridge near Ulpha" and "Cottage near Holker." A fine group of the members of the Club on one of the summer excursions came in for much attention, not only on account of its excellence as a portrait, but as it was a picture of "our noble and important selves." If one is to judge by results, Mr. Stamp's work was much appreciated. Mr. Carless showed some excellent daintily mounted views of local scenery, which, if not striking at a distance, bears inspection, and in our opinion is as good as any of its class on the walls. Mr. Weston showed three enlargements besides two sheets of photographs. The two sheets of photographs done by Mr. F. Walton were much admired on account of their effective mounting. Mr. Timms had several enlargements, the chief being one of Penny Bridge, besides other full-plate photographs. Mr. Jochumsen, Mr. Gower, and Mr. Taylor also showed much creditable work, the former especially having well arranged sheets. Mr. R. Spencer had a series, forty-four photographs of local and Scottish scenery, and of interiors at the Steel Works. His views of the interiors of churches in town strike one as being his best work. Mr. Wm. Sewell showed a number of full-plate instantaneous photographs of familiar streets in Barrow, and one photograph of "Furness Abbey" taken without a lens, through a pin-hole, is interesting. The twenty-five transparencies, full-plate, on Alpha plates—by Mr. Redhead—of scenes in Wensleydale, Wharfedale, Eskdale, Duddon Valley, and Fountains Abbey are amongst the most beautiful work shown. The careful workmanship and high artistic beauty of these were universally commended and admired. During the evening two lantern exhibitions were features of the entertainment. The first slide shown was the President of the Club, Mr. Edge, and was followed by one of the Chairman of the Section, Mr. Bletchynnden. The slides, numbering over one hundred, were shown by Mr. Timms, and were all exceedingly fine. "Yachts on Walney Channel," by Mr. Carless; "In Kirkby Park," Mr. Redhead; and "Grasmere Church," by Mr. Dunlop, call for special notice in a series which was generally excellent. Messrs. Redhead, Dunlop, Carless, Jochumsen, Timms, and Sewell were contributors of slides. Mr. Wm. Sewell gave in an effective manner the explanations required. At intervals during the evening a programme of songs, etc., was rendered.

## Societies' Meetings.

ASHTON.—The first annual meeting was held on 17th inst. Dr. Hamilton, President, was in the chair, and there was a large attendance, among those present being Messrs. J. W. Kenworthy, C. E. Redfern, T. Glazebrook, R. T. Marsland, G. H. Dean, Hon. Sec., and many others. The Secretary, Mr. G. H. Dean, read his first annual report, in which he said the council congratulated the members on the great success that had attended the Society during the first year of existence. Photographic papers had been presented before good audiences by Dr. Hamilton, T. Glazebrook, G. H. Dean and others. Saturday rambles during the summer season were also well attended. The places visited were Strines, Whaley Bridge, Haddon Hall, Dean Valley, Miller's Dale, Gawsworth, Chatsworth, and Chester. During the winter months demonstrations and lantern exhibitions were given by some of the best workers in photography in the district. From February 16th to 20th, inclusive, a photographic exhibition was held in the Town Hall, and proved throughout a great success. It was first arranged only to have three nights but the support received from the public induced the council to extend the time two nights longer. Over a thousand pictures were exhibited, and lantern exhibitions were given by celebrated lanternists. They had also extra meetings in connection with the exhibition. The number of members who had joined since last March was 109, and he had only received two resignations. In conclusion, he suggested that the members should meet one night per week for conversation and exchange of ideas on matters photographic. It would also tend to promote a spirit of unity. Mr. R. T. Marsland then presented the Treasurer's statement, from which it appeared that the income was £88 9s. 8d., the chief items of which are as



follows:—By subscriptions, £39 9s.; from hiring of rooms, £12s. 6d.; loan, £25; balance from exhibition account, £6 8s. 8d. On the expenditure side the chief accounts are:—By rent and hire of rooms, £20 5s.; furniture and fittings, £34 5s. 8d.; printing and stationery, £6 5s. 4d. After making all payments there is a balance in hand of £9 7s. 6d. The officers elected were:—President, Dr. Hamilton; Vice-Presidents, Messrs. J. W. Kenworthy, C. E. Redfern, the Rev. H. J. Palmer, and Major Bradley; Committee, Messrs. W. Chadwick, T. Glazebrook, W. Greenwood, R. Hall, W. Leigh, R. Matthews, C. Lord, and G. Nield; Treasurer, R. T. Marsland; Secretary, G. H. Dean.

**Birkenhead.**—A meeting was held on the 10th inst. The attraction of the evening was the Norwegian photography of the late Dr. Arnold. The whole of this gentleman's photographic experiences is summed up in his trip to Norway last year, when he carried with him only a small hand-camera. The negatives were wonderfully good for a novice, and ample justice to them had been done by Messrs. Robinson and Thompson, who made the slides. Later in the evening the claims of Mr. Stead's "Magic Lantern Mission" were brought forward by Mr. F. N. Eaton, and after an interesting discussion, in which Mr. E. M. Tunstall, Mr. J. A. Forrest, and others took part, it was decided to form a local branch.

**Blackheath (Camera Club).**—At the ordinary meeting, Tuesday, 8th inst., Mr. William Farrington (curator) in the chair, Mr. E. J. Wall lectured on "Colour Photography," and exhibited prints in illustration of various processes, from the first suggestion of Collen to the latest development of the present time. In the course of his remarks the lecturer said Collen in 1865 first contended for making plates sensitive to the primary colours, from which subsequent good results have been obtained. To give some idea of the process, take three colour-sensitive plates and expose them on the same object behind red, yellow, and blue coloured screens, each of which cuts out respectively the rays of colour not required to act. Collotype plates are made and inked up in corresponding colours, the superimposed printing effect of which gives a very good result. Respecting the chemicals used for preparing colour screens, soluble Prussian blue will cut out the red and yellow rays and allow the blue to act, helianthine cuts out the red and blue for the yellow and green to act, and bichromate of potash cuts out the blue and yellow to let the red act. Vogel, who discovered the optical sensitizer, goes still further, and proposes to make seven negatives sensitive to the colours of the spectrum to be printed in the same way. Ives' *modus operandi* to show natural colours is by use of the lantern fitted with three lenses and screens so arranged as to superimpose the pictures when displayed on the sheet; while Scott works in a similar way with four lenses. Albert, of Munich, has apparently made the greatest advance of all, but his method is a comparative secret at present. At the close of this interesting paper, Mr. Wall exhibited a new lens, and a novelty in celluloid film lantern slides, concluding with a few new formulae for developing gelatino-chloride prints.

**Canterbury.**—On the 9th inst. the members of this society gave the second of a series of lantern exhibitions in St. Paul's parish room. A first-class series of photographic competition slides were shown by means of the oxy-hydrogen limelight by Mr. Sanctuary, whilst the description of the slides was given by Mr. Story. In addition to the above set a number of slides by Dr. Evers, of Faversham, were shown. There was a very good attendance.

**Croydon Camera Club.**—Ordinary meeting on the 14th, the President in the chair. Mr. D. E. Goddard read an excellent paper entitled "An Introduction to Silver Printing." As it will appear in the columns of this journal, a *resumé* is not needful. A considerable gathering followed the lecturer's remarks with great attention, and a useful discussion ensued. The following gentlemen were elected members: W. H. Hope, J. Smith, and T. B. Roberts. The 28th will be a lantern night for members' slides, and on the 4th April Lieut.-Colonel J. Gale will give a lecture entitled "Rambles, Rural and Pastoral," illustrated by a selection of his slides. Admission by invitation only.

**Dundee and E. Scotland.**—A special meeting was held on 17th inst., Mr. J. D. Cox in the chair. The sets of slides sent into a competition limited to those members who had commenced photography since 1st January, 1889, were passed through the lantern, and the prizes adjudicated by the votes of the members present. The awards will be intimated at the April meeting. A set of prize slides were then exhibited, the general excellency of which was marked by the large number receiving applause. Several slides from negatives taken during the late snowstorm were shown by Mr. J. D. Cox and others. Dr. Tulloch exhibited a series of slides made on plates prepared in carbon, albumen, bromide of zinc, etc.

**Faversham.**—At the meeting held on the 15th inst., when Dr. Evers presided, a paper upon "Photo-Micrography," was read by one of the Vice-Presidents, Mr. W. C. Stunt, who, by means of apparatus arranged by himself, showed how to produce photographs and lantern slides of microscopical subjects. Examples of his work were exhibited, and altogether a very instructive evening was spent,

the actual treatment of the subject being somewhat novel to most of the members.

**Hackney.**—The ordinary meeting was held on 17th inst., Mr. Beckett presiding. The members were reminded of the loan collection of lantern slides. The idea was to form a collection which could be lent out to members on application. A result was shown in which comparison had been made between Alpha and ordinary lantern slide, and it was generally thought that the Alpha was the better. An excellent paper on "Lenses" was given by Mr. W. P. Dando, tracing the subject from how light was obtained, and the effect brought about by the lens. Numerous diagrams were used by Mr. Dando to illustrate his paper. Astigmatism, spherical aberration, and every point, fault or otherwise, were exhaustively dealt with by the lecturer, and in a very comprehensive manner, so that the merest tyro could understand it. The paper was attentively listened to throughout.

**Hull.**—A lantern exhibition was given on the 17th inst. The slides were manipulated by Mr. J. Pybus, and the scenes described by the President, Dr. Howlett. These consisted of views taken by the members of the society, comprising pretty bits of the Isle of Wight, Derbyshire, the Lakes, etc., and also a series of slides lent by the Photographic Society, depicting scenes in Tasmania, South Africa, and East India. All the views were admirably executed, and showed that considerable photographic skill had been used in their production.

**Ireland.**—In consequence of the success of the recent public lantern exhibition of the Photographic Society of Ireland in Dublin, a similar one was held on the 18th inst. in the Town Hall, Kingstown, as being the centre in the vicinity of which a large proportion of the members of the Society reside. The evening was very successful, and the views, to the number of 260, represented almost every grade of photographic work. The lanterns were in the able hands of Mr. Jas. Carson, and the pictures, which were displayed to advantage on an 18 ft. sheet, were described by Professor J. A. Scott, Vice-President of the Society. The slides of the Hon. Secretary, Mr. J. H. Hargrave, which had been awarded the silver medal in the recent competition, were much admired, as were also those of Mr. L. R. Strangways, who came second. Slides were also contributed by Messrs. M. Hedley, Greenwood Pim, N. Colgan, R. M. Inglis, Dr. Cosgrave, Miss White, Geo. Drury, C. Steele, and Professor Scott.

**Ipswich.**—A meeting was held on 16th inst. when Mr. C. Joslin read a paper on "A Holiday in Norway," illustrated by a series of capital lantern slides made by himself and Mr. B. Corder. The slides included a number of beautiful pictures of mountain and river scenery and several quaint Norwegian cottages, and altogether the members and visitors were provided with a very enjoyable entertainment. As on many former occasions, Mr. W. H. Booth lent his fine biunial lantern to exhibit the pictures.

**Kendal.**—The members held their annual lantern slide competition on 16th inst. Mr. Frank Wilson, J.P., in the chair. The show was an excellent one, the majority of the slides being really good; it was generally agreed that there was not a really poor slide in the lot. The competition was divided into four classes, and resulted as follows:—Landscape and Seascape: 1st, F. P. Heath; 2nd, G. E. Moser; 3rd, J. Severs. Portrait or Figure Study: 1st, J. Severs; 2nd, G. Gilkes; 3rd, P. Sharpe, sen. Architecture: 1st, F. P. Heath; 2nd, J. Severs; 3rd, G. Gilkes. Best Single View of Nether Bridge, Kendal: 1st, F. P. Heath; 2nd, Frank Wilson; 3rd, Samuel Hargreaves. The prize slides of last year were exhibited, and some few special slides that were brought by members. Mr. W. Henderson was elected a member of the section.

**Leigh.**—The fortnightly meeting was held on the 17th inst. The Vice-President, Mr. James Ward, B.A., presided. Mr. T. Haddock gave a paper on "Cameras," criticising the different kinds of cameras and recommending the square form. A discussion afterwards took place, Mr. E. A. Williams, Mr. Ward, and Mr. Leigh taking part. The members brought their cameras, and Mr. Crouchley exhibited some novelties sent down by Messrs. Taylor, Taylor, and Hobson, of Leicester, for the inspection of the members, including their famous lens, also detective lens and finders.

**Lewisham.**—March 18th, Mr. M. Stodart in the chair, Mr. A. H. Miles, Vice-President, read a paper on "Photography with an Object." He said that the great fault of nearly all amateurs was want of method, as, in looking through specimens of their work, you would find all sorts of subjects mixed together, which, if classified, would have greatly added to their interest. He advised that they should take up certain branches of work, such as trees, flower studies, illustration of poems, etc. He concluded his paper by showing a number of very fine lantern slides from paintings of "Ecce Homo." After the paper, the prints and lantern slides sent in for the competition were exhibited and awards announced. Mr. A. R. Dresser judged the slides, and Mr. H. Bedford Lemere the prints, and both remarked on the improvement since the last competition, especially the prints, which Mr. Lemere said were a very fine set indeed, especially for so young a club.



**Leytonstone.**—A meeting was held on the 9th inst., Mr. R. Thiele in the chair. Amongst other business transacted it was resolved to continue the tenancy of the Assembly Rooms, High Road, under slightly different terms, and the Committee was also added to. The following gentlemen now constitute it:—Dr. Pickett Turner, Messrs. Overton, Sanderson, Symons, Summers, Turner, Thiele, Bailey, Wire, Cuffley, Wates, and Newton. The accounts submitted showed that the finances of the club were flourishing.

**Liverpool Y M C A.**—On the 16th inst. Mr. R. S. Archer gave a lecture and demonstration to the members of the above club on "Ourselves Anatomically." Mr. John C. Lee was in the chair. The lecturer enumerated the various portions of the human frame, and described their different functions and relations to each other in an interesting and entertaining manner, his remarks being followed by the members with great attention. Several questions were asked, to which the lecturer replied.

**Lowestoft**—A meeting was held on the 3rd inst., and an interesting paper was read by Mr. F. W. Emuss on "Lenses." He dealt with the laws of refraction, instancing that it takes place when a ray of light passes through water, then through prisms, and finally through a lens. He showed by experiments that light is reproduced on the retina of the eye by refraction through the lens, and, acting on the nerve filaments, conveys the sensation of vision to the brain. Applying this principle to the science of photography, Mr. Emuss showed that the receptive property of the nerve filaments is precisely that possessed by the sensitive plate, with the difference that in the case of the plate the image is retained, while in that of the eye it is conveyed to the brain. The various faults of lenses and the means of rectifying them were described, and a number of slides of exceptional merit by Mr. W. Stringfield were exhibited.

**Midland Camera Club.**—General meeting 18th inst., under the chairmanship of the President, Dr. Hall Edwards. There was a capital muster of members to hear Mr. John Howson, of the Britannia Works Co., demonstrate the value of Isochromatic plates, and very great interest was shown. Mr. Howson was extremely practical, very modest in his claims, and by developing two plates exposed behind a coloured screen, the light used being magnesium wire, proved conclusively the advantages of an Isochromatic plate even without a yellow screen. His points were clearly put and understood. The members were extremely pleased with the lecture and demonstration. The usual questions were put and courteously replied to. Prior to the lecture, a letter from the Cheltenham Society was referred to the Council. Mr. Bentley showed the difference he had obtained by the use of an Isochromatic plate; Mrs. Welford showed a 60-times Fry's film of a difficult church interior, to which she gave twenty minutes' exposure, and the result showed little or no halation, and also some hand-camera shots on Isochromatic films; W. D. Welford (Hon. Sec.) showed the "Daisy" printing frame, the "Owngood" developing tray, and manipulated the Todd-Forret flash lamp.

**North Kent.**—A meeting was held on 17th inst. Mr. P. J. Boorman occupied the chair. The evening was spent in an exhibition of lantern slides lent by the Secretary and Mr. Field. Some samples of bromide paper sent by the Eastman Co. were distributed among the members.

**North London.**—On the 13th inst., Mr. Hedley M. Smith in the chair, the business of the evening was a lantern slide competition, the slides being made from four negatives supplied to the members for the purpose. The comparison was made by means of two lanterns identical in their optical construction, and carefully adjusted to give equally lighted discs on the screen. Two similar slides being thus shown side by side, the inferior one was removed, the best remaining until displaced by a better. The four sets having been thus disposed of, and voted upon, it was found that Mr. J. Oakley had taken three first places and one second, with Mawson's lantern plates (pyro development). Mr. B. J. Grover, one first place and one second, with collodio bromide plates, the emulsion being his own preparation. Mr. E. M. Groundwater, two second places, with Ilford special plates (hydroquinone developer). Arrangements have been made to obtain the loan from the Photographic Society of Great Britain, of Dr. Jeserich's paper on "Photography as applied to the Detection of Crime," which will be given with the original illustrations, at the next meeting, on Tuesday, April 5th, at 8 15 p.m. Visitors are invited.

**North Middlesex.**—On 14th inst. Mr. S. E. Wall in the chair, Mr. Walker delivered a lecture on "Photographic Procedure in the Dark Room." In his usual kindly and conversational manner he carried his audience through the whole process of negative making, from the exposure of the plate to the final drying of the negative. Touching upon the principles involved just sufficiently to make his meaning clear, he dealt minutely with all points of practice; the qualities of various developers and their peculiarities, the method of compounding the developer, and gave as his favourite—Pyro, 1 oz.; meta-bisulphite of potash,  $\frac{1}{2}$  oz.; water, up to 10 oz. This he considered an admirable developer for amateurs working at irregular intervals, as it

would keep indefinitely free from discolouration; meta-bisulphite was said to act as a restrainer, but he thought that an advantage to a beginner. He used the bromide and the ammonia in 10 per cent. solution, and mixed the developer in the proportion of grains to the ounce given by the makers of the plate, but in cases of uncertainty as to exposure kept the strengths of all the chemicals slightly weak till the tendency of the plate was known. He then dealt with under and over exposure, giving careful and minute advice as to procedure. Frilling, halation, and a number of other pitfalls were considered, and advice given. The address gave rise to a long and interesting discussion. At the last meeting packets of bromide paper kindly sent by the Eastman Company were distributed among the members. The prints made upon them were now shown, and questions as to difficulties met with were asked and answered. Some of the prints were very fine, great atmospheric effect having been obtained. Twenty-four packets of plates were by the kindness of the Imperial Plate Company distributed among the members to be tested, also copies of exposure tables sent by Mr. Manson, a beautiful print of ice crystals given by Mr. Martin, and this was passed round for inspection. The crystals had assumed a wonderful harmonious design of fern, fronds, and flower forms. The next meeting will be held on the 28th inst., when Mr. Beadle will demonstrate on "Enlarging by Artificial Light without the use of a Lantern."

**Notes.**—A most interesting lecture was given on the 18th inst. by Dr. Manton, of Sheffield (late of Nottingham), President of the Sheffield Optical Society. The lecture was divided into two parts, the first being entitled "The Cruise of the 'Pixie,' or a Sportsman's Holiday." This was illustrated by a series of forty limelight views specially prepared by the lecturer, many of which were really exquisite. The second part of the lecture was a description of "The Workshop of the World," several of the views eliciting quite a hearty cheer, which the lecturer eventually expressed his appreciation of. Mr. Blandy, President of the association, introduced the lecturer, and the lantern arrangements, which were faultlessly carried out, were under the direction of Mr. G. Smith.

**Polytechnic.**—On March 18th the old wet-plate process was the subject of a lecture by the Secretary, and although collodion is not much used now for portrait work, it easily holds its own for photo lithography, photo zincography, photographs on wood for engravers and for lantern plates. Some portrait negatives by Mr. W. E. Debenham were shown as examples of work in the early days, and copies, negatives, photo prints, photo transfers, and finished block and proofs of same were exhibited as samples of the present time commercial work. Next meeting March 29th, when Capt. C. E. Gladstone kindly gives his lecture on "Westminster Abbey," and any photographer who would like to attend may obtain a ticket (gratis) by sending stamped addressed envelope to 309, Regent St., W.

**Putney.**—On March 16th adjourned ordinary meeting, Dr. W. J. Sheppard in the chair. Mr. Ardaseer was again unable to be present through illness, but kindly sent a very able paper on "Development," which was read to the members by the Hon. Secretary. An interesting discussion followed in which most of the members joined. A new member was elected.

**Richmond.**—At the meeting on the 18th inst., Mr. Cembrano in the chair, Mr. Faulkner gave an address on "Makeshifts," postponed from a former occasion. A more appropriate title would have been "Home-made Apparatus," for the various contrivances shown and explained by Mr. Faulkner, besides being beautifully made and models of compactness, were admirably designed to meet the various purposes for which they were intended. They comprised a rocking developing dish with adjustable cover to wholly or partially exclude the light; a printing frame with double rebate for holding coloured glass, vignetter, etc., and a simple catch for the back springs, avoiding the risk of shifting the paper in pressing the spring home; a box for exposing bromide paper, lantern slides, etc.; a combined shutter and sunshade, a drying box for negatives, a lamp for making contact exposures, and, finally, a most compact and businesslike quarter-plate hand-camera, which could give points to many a much-advertised "smallest thing in the market."

**Southsea.**—At the last meeting, held on the 16th inst., before a large number of members, a paper was read by the Hon. Sec., Major Bruno. His subject was "Reminiscences of the Historical Island of St. Helena." He began with a description of the island, by mentioning the connection with the exile and the death of the great Napoleon; its position on the high road to India, *via* the Cape, constituting it (until the opening of the Suez Canal) a sort of half-way house for ships of all nations. The lecture was illustrated with numerous slides; amongst others were Napoleon's tomb; the ladder which leads to the top of the rock, with a fortress, the ladder having 669 steps, and being considered one of the show sights of the island; the Custom House; the Castle, which is the governor's house; swearing in the governor; and many others. But perhaps the most interesting was the night-blooming cereus, which was reproduced in the AMATEUR PHOTOGRAPHER some time since.



## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

### QUERIES.

5539. **Varnishing.**—Can any reader inform me what kind of polish or varnish is used for camera and dark slides; if there is a French polish or other polish you can put on with a brush, which is easier and quicker than the ordinary way of French polishing, but not the ordinary varnish, such as oak varnish, etc., and where I could get it?—AN AMATEUR.

5540. **Amlens, Beauvais, Rouen.**—Is any permit necessary to photograph the exterior of the cathedrals, or in the streets of the above towns? Any hints will oblige.—M. B. F.

5541. **West Kirby.**—Is West Kirby (on the Dee) near to the water, and has it a beach and boating like New Brighton? How is the immediate scenery? Could a day be well spent in snap-shooting, etc., and can apartments easily be obtained? A short description would be much esteemed.—LEANDER.

5542. **Hand-camera.**—Will any reader of the AMATEUR PHOTOGRAPHER who has tried one of Wilson's Marvel hand-cameras, tell me if they will take and if they are fairly reliable for an amateur? Also what is the price of Tylar's metal dark slides to fit Lancaster's Instantograph half-plate, and who they are to be obtained from?—DARK SLIDES.

5543. **Mountant.**—Will any reader kindly inform me if Le Page's fish glue is suitable for mounting prints? Also will any reader give me his experience with Wilson's Marvel camera, and if they can recommend it?—MARVEL.

5544. **Photographing in Paris.**—Will you kindly inform me whether photography (with tripod) is allowed in Paris or environs, and whether there are places where good views may be had?—LUX.

5545. **Demon Camera.**—Will any reader who has tried the Demon 5a, tell me if you can get a fair picture with them?—DEMON.

5546. **Encaustic Paste.**—Can anyone give me the receipt for making encaustic paste?—M. K.

5547. **Autumn Holiday Tour—Holland, Belgium.**—Would any of your readers kindly send to "P. M.," care of AMATEUR PHOTOGRAPHER office, or through answers to correspondents, suggestions for inexpensive tour for obtaining materials for magic-lantern lecture purposes—places, habits, objects, books of reference, etc., in Holland, Belgium, or neighbourhood?—G. E. M.

5548. **Florence.**—Will any amateur who knows the city of Florence kindly inform the writer if permission can be readily obtained to photograph interiors such as the cloisters of the convent of San Marco and Michael Angelo's statue of the Medici, etc., in San Lorenzo? The names of a few of the places in and about the city where good photographs can be made would be highly esteemed.—INQUIRER.

5549. **Hand-camera.**—Would any brother amateur kindly tell me what kind of lever I should require fitted to the bottom of a hand-camera I have made? The lever is to raise the exposed plate enough to grasp it and pass it to the back by means of the changing bag, which is at the top. The lever must be arranged so that when it has pushed the plate up it must go down again of its own accord, or by some arrangement so that I can pull it down level with the surface of the bottom of the camera so that the next plate will be allowed to slip over it and be in focus. If it is not level with the bottom it will stop the bottom of the plate from coming into exact register. The thickness of the bottom of the camera is about 3-16ths of an inch. Any information will greatly oblige.—R. V. B.

5550. **Enamelling.**—Can any one give me instructions for enamelling prints?—R. T. E.

5551. **Actinograph Speed.**—Could any reader give the speed number for Wratten's ordinary instantaneous and drop shutter, also Mawson instantaneous plates, according to Hurter and Driffield's actinograph?—FRED.

5552. **Focussing.**—Will any reader who has made a hand-camera by putting another camera in a box, tell me how they manage about the focussing, as that is the part I cannot manage? A reply will much oblige.—FOCussING.

5553. **Printing on Wood.**—Will some reader kindly tell me how to sensitise a wood block and produce picture on same?—DAVID.

### QUERIES UNANSWERED.

Feb. 19.—Nos. 5445.

" 26.—Nos. 5476, 5481, 5482.

Mar. 4.—Nos. 5489, 5492, 5495, 5501.

" 11.—No. 5508.

" 18.—Nos. 5519, 5524, 5531, 5532, 5533.

### ANSWERS.

5483. **Washing Plates.**—Certainly not; after the negatives or prints have been fixed, there is no need for keeping them in the dark. Fill a large basin or tank with water, bring it into the house, and let the prints or plates remain in it all night, or if you are developing through the day, put them into the washing-bath for about four hours for negatives and lantern slides, and six or eight hours for prints. Of course, the water could with advantage be changed once or twice.—U. B. SMART.

5514. **Glazing Prints.**—Squeegee the prints on to a ferrotype plate, which should be well cleaned first by washing in hot water, and afterwards rubbed over with French chalk; after this is wiped off the prints should be squeegeed down whilst wet.—FOLIAGE.

5514. **Glazing Prints.**—H. H. Cobb should get an enamel metal plate, whole-plate size, at 1s. each, put about one or two drops of olive oil on to it, rub well on and then polish gently, squeegee print well down with roller, when he will find prints to fall off, when dry, ready to mount, if they have been backed with stronger paper immediately after squeegeeing, and after blotting the print to soak up surplus water. Get some Aristo-type paper from the same firm, viz., Jonathan Fallowfield, 146, Charing Cross Road, London, W., and H. H. Cobb, I am sure, will be delighted with results. If he likes glazed prints, full instructions will be found with enamel metal plate, and the one-solution toning and fixing bath is A1, and saves time, which is very valuable to amateurs.—A. R. C.

5514. **Glazing Prints.**—There is no surer or safer method of glazing chloride prints than to squeegee on to an enamelled iron plate, which you can obtain from almost any dealer. When dry, your prints ought to fall off, but if they have a tendency to stick a little, raise the corner with a knife and strip, when you will have a glaze unequalled by any other process.—ZEBRA.

5514. **Glazing Prints.**—Simply squeegee on to ferrotype plates and leave till dry; then peel gently off, or they will tumble off of themselves if left in a warm room.—R. A. R. BENNETT.

5514. **Glazing Prints.**—The cause of your prints tearing is because the glass is not clean, or they are peeled from the glass too soon. Remedy: Clean the glass thoroughly with warm water, dry with clean rag; gently rub the surface of glass with a little talc (French chalk), and then polish with a piece of silk; take the wet print and squeegee its surface on the glass. Allow the print to dry naturally (not by heat) for three hours at least, then lift the print from the corner with a penknife and gently strip from glass. The print must now be kept from the damp, or else it will lose its enamelled surface.—PEDAGOGUE.

5514. **Glazing Prints.**—Take a piece of glass (preferably plate-glass) and pour a few drops of castor oil on it, and rub it all over the surface with a cloth, then remove it thoroughly with a clean dry cloth. After the above has been done, sprinkle a little French chalk over the glass and then rub it off well. The glass should now have a dry, clean, and polished surface. Now take your print, after it has been washed, and while wet lay it face down on to the glass and thoroughly squeegee it, removing all air bubbles. Lay this below a bundle of books, or such like, and when the print is dry it should peel off the glass with a high glaze. Ilford P. O. F. works very well this way.—U. B. SMART.

5515. **Rolling Press.**—I am afraid there is no remedy; that is, providing your plate is all one piece. Some presses, indeed most, have a thin layer of steel screwed upon iron; if this is so, in your case you might manage to have it unscrewed and straightened. The safest way would be for you to get a new plate, or have one made, which would not cost you very much.—ZEBRA.

5516. **Intensifier.**—The following is Dr. Eder's formula, and is acknowledged to be the best:—

|                               |        |
|-------------------------------|--------|
| Uranium nitrate .. .. .       | 15 gr. |
| Potassium ferriyanide .. .. . | 15 "   |
| Water .. .. .                 | 4 oz.  |

—E. T. BUSTON.

5516. **Intensifier.**—The following is an excellent uranium intensifier:—

|                                  |        |
|----------------------------------|--------|
| Uranium nitrate .. .. .          | 15 gr. |
| Ferriyanide of potassium .. .. . | 15 "   |
| Water .. .. .                    | 4 oz.  |

Sulphate of copper is not so much used.—ZEBRA.

5516. **Intensifier.**—Soak negative in a solution of—Gold.. .. . 50 gr.  
Water (distilled).. .. . 1 oz.

for ten minutes. Then let excess of the solution drain off the plate, and then soak it in a solution of same strength of ferriyanide of potassium till dense enough; wash, and dry.—U. B. SMART.

5517. **Taking Group.**—Unless you arranged your group about half a mile apart from each other, I fail to see how you could only have got one face sharp and the rest fuzzy, unless the others moved, or you shifted your camera. I presume you mean the stop used was f/11. Try stopping down to f/32, which will give you much more definition. I should think in all probability the fault was due to a slight movement on part of the sitters.—ZEBRA.

5517. **Taking Group.**—I think the stop was too large; try a smaller stop, say f/22 or f/32. This is what I use for groups generally, and I have taken dozens successfully. My lens is a Lancaster's half-plate instantaneous. You do not say what the exposure was; perhaps it was over-exposed. Try these stops and report results.—FOLIAGE.

5517. **Taking Group.**—Tie a piece of string to the middle leg of your camera long enough to reach the middle of the group, then mark a curve with a piece of stick or chalk fixed to the end of the string, and then seat the people of the group on this line, so that they are sitting on the part of the circumference of the circle which has your camera for its centre.—TE WIRRMU.

5517. **Taking Group.**—Use a smaller stop. Surely your lens does not cover the plate very well.—U. B. SMART.

5517. **Taking Group.**—How to focus a group so that every face is distinct depends upon many things. "Jingo" does not state where in the group his one success was placed. In focussing a group the photographer has one advantage; he can move his subjects to the best position with regard to the camera and the lens, which cannot be done in the case of landscapes or architecture. On the other hand, these do not usually move, whereas persons always do move more or less while the lens is uncovered. The best way to get all the faces in focus is to form them into an arc of a circle, and to be sure that the focussing screen is parallel with an imaginary line drawn across the extreme ends of the arc, also that it is upright, or better, parallel with the general outline of the group. Perhaps the lens is in fault, in which case it should be replaced by a better one, if it is to be often used. With a very common lens it is possible, by careful focussing and skilful manipulation of the stops, to get a great part of the picture fairly sharp; or the lens may have no depth of focus. This can be remedied to a certain extent by carefully posing the group. Perhaps this will enable "Jingo" to ascertain the cause of his failure.—EXPERT.

5518. **Making Screen.**—Instructions will be probably given shortly in the articles on "The Lantern," now appearing in the AMATEUR PHOTOGRAPHER.—EXPERT.

5520. **Tylar's Metal Dark Slides.**—I have three of these, which I use with a half-plate Instantograph. I have had them about two years, and on the whole I think you would do better to stick to the wooden ones. There are one or two objections to the metal ones, viz., they are apt to stick, and when this is the case the tape to pull them out will break off; another is they do not fold back when slide is withdrawn.—FOLIAGE.

5520. **Tylar's Metal Dark Slides.**—The slides are heavier than ordinary wooden ones, but there is no fault to find with them whatever excepting this.—ZEBRA.

5521. **The Studio.**—This should, if possible, face the north. The best light is a toy one, and a side light reaching to within a few feet of the ground, so that the hoots may be lighted as well as the head. H. P. Robinson's book "The Studio, and What to Do in It."—E. T. BUSTON.

5522. **Reducer.**—The reducer to which I referred you will reduce your intensified negatives and not cause any white film. Wash them well before the solutions and after reducing.—R. A. R. BENNETT.

5523. **Spotting Out.**—All spots should be filled with red paint mixed with a little gum and water, but care must be exercised in this operation to put only just enough paint on to fill the hole.—E. T. BUSTON.

5525. **Dark-room Lamp.**—Try a candle lamp; don't mess about with oil. Benham and Froud, of Chandos Street, London, make a very good one called the "Holiday," price 10s. 6d. This, I am sure, you would have no trouble with. This can be used also as a reading lamp by inserting a piece of plain glass, and it also folds up very compactly for travelling.—FOLIAGE.

5525. **Dark-room Lamp.**—I made a dark-room lamp this week which cost me nought. Buy an ordinary benzoline lamp at 6d. each, get a tin box that



will ust fit over lamp round the bottom rim of the lamp (when small handle is taken off); about  $\frac{1}{2}$  or 2 in. will be deep enough; a baby's food or cocoa tin would do with 2 in. cut off round the top. Have this soldered on round the bottom, and you will find that a 1d. hock bottle from any wine merchant will just fit into this. You will find it necessary to have the end cut off the part for turning up the wick. Then get some worsted, wrap round the hockle three or four times about 1 in. from the bottom, dip in a saucer containing methylated spirit until soaked, light the spirit and let it burn until it goes out; repeat the operation a time or two (taking care to wipe off any spirit that may run anywhere except where worsted is), plunge suddenly in a bucket of cold water, when you will find the bottom to fall off; repeat the operation about 3 or 4 in. from neck of bottle, when neck will fall off. To make a light trap for top of bottle, get a piece of tin, out round 3 in. across, two more pieces of tin about  $3\frac{1}{2}$  in. long and  $\frac{1}{2}$  or  $\frac{3}{4}$  in. wide, cross these pieces, and have them rivetted into the round piece, which should be beaten hollow like a saucer, bend the cross pieces so as to fit into top of bottle something like the shape of an S, when you will have one of the neatest, strongest, safest, and best lamps that could be bought at any price; burn paraffin in lamp.—A. R. C.

5525. **Dark-Room Lamp.**—Write to J. Lancaster and Son, Opticians, Birmingham, for their "Rubralux." It is an admirable lamp and burns paraffin. The price is 7s. 6d.—PERIODIC.

5525. **Dark-Room Lamp.**—"Carlos" does not say what price he wishes to go to. There are so many good makes in the market at present. The "Climax" or the "Model" are both good lamps, which can be obtained from Messrs. Adams or Fallowfield; price, Model, 4s.; Climax, 6s. 6d.—ZEBRA.

5526. **Distilling.**—It certainly is illegal to be in possession of a still without a licence, except you are a chemist, and then only under certain conditions. Whether the Revenue officer would interfere with an amateur photographer having a still for the purpose of distilling a little water is an open question, but it is well to be on the safe side. E. B. should enquire at the nearest Inland Revenue office, and he will doubtless get all the necessary information on the subject.—EXPERT.

5527. **Silver Ring Rectigraph.**—You cannot do better than get Lancaster's Silver Ring Rectigraph lens. It is excellent for portraits and equal in every way to the Optimus EurySCOPE.—PERIODIC.

5528. **Mountant.**—A good mounting solution which I have found very satisfactory is as follows:—

|                        |                 |
|------------------------|-----------------|
| Gelatine .. .. .       | 2 oz.           |
| Glycerine .. .. .      | $\frac{1}{2}$ " |
| Methylated spirit.. .. | 2 "             |
| Water .. .. .          | 8 "             |

Dissolve the gelatine first, then pour on the glycerine, and then the spirit.—FOLLAGE.

5528. **Mountant.**—Dissolve by gentle heat—

|                   |         |
|-------------------|---------|
| Arrowroot .. .. . | 150 gr. |
| Gelatine .. .. .  | 150 "   |
| Water .. .. .     | 3 oz.   |

When cool, add—

|                        |                     |
|------------------------|---------------------|
| Methylated spirit.. .. | $\frac{1}{2}$ drin. |
| Carbolic acid .. .. .  | 3 drops             |

(Wall's "Dictionary.")—PERIODIC.

5528. **Mountant.**—Take 4 oz. of best glue, and soak it in water until it swells to double its former size and becomes quite flexible, then melt it in a large pot, standing in a saucupan of boiling water, with frequent stirrings. Now add, very gradually, in small doses, half a pint of methylated spirit, stirring between each addition, strain through muslin, and bottle off for use. The bottle should be a wide-mouthed one. This must be placed in hot water to melt the contents before use. This mountant does not cause the mounting board to cockle, like many others.—E. T. BUSTON.

5528. **Mountant.**—Mix flour and water together in a basin, then put this basin in a saucupan with water in it, and then boil till the paste gets thick.—T. WIRREMU.

5528. **Mountant.**—A good mountant can be made with starch, but as common starch is prepared with soda, this may be objectionable. Arrowroot, which is practically pure starch, is better. To make, put a few teaspoonfuls into a basin, and mix with just sufficient water to form a thick paste free from lumps, pour on boiling water, and then boil for a few minutes, keeping it well stirred; when cool it will form a thick jelly. Users of paste generally add alum, which improves it, and makes it keep good longer, but this is not advisable for photograph pictures, as alum is a slightly acid salt.—EXPERT.

5529. **Mounting Enamelled Prints.**—If you want to preserve the whole of the gloss on your prints, you will require to back them with paper while they are still on the glass. They can then be peeled off and mounted in the usual way.—U. B. SMART.

5529. **Mounting Enamelled Prints.**—I find that the best way to do this is to paste the back of print with mountant, whilst on the glass (before it is dry), and squeeze the mount on to it. Rather thin mounts should be used for this purpose. When dry, gently

lift the mount from glass, and the print will come off with it.—PEDAGOGUE.

5529. **Mounting Enamelled Prints.**—Whilst the prints are on the glass, back with black enamel paper, cut within  $\frac{1}{8}$  in. same size as prints. When dry, the two will peel off together. You can then mount them round the edge with a strong mountant, either indiarubber solution or best Russian glue.—ZEBRA.

5530. **Cement in Lens.**—This can be remedied by gently warming in front of a fire, or heating gradually in water, taking care not to crack the glass, and when sufficiently hot the two glasses can be separated, and the old cement washed off with turpentine. If the lens is a very old one it may have to be heated in turpentine or ether, to dissolve the cement. The glasses can then be re-cemented with Canadian balsam. If the lens is valuable, "Tim" had better not try this process himself, but send it to a lens maker, many of whom advertise in the AMATEUR PHOTOGRAPHER.—EXPERT.

5534. **Photograph on Silk.**—Immerse the silk in—

|                          |       |
|--------------------------|-------|
| Water .. .. .            | 1 oz. |
| Gelatine .. .. .         | 5 gr. |
| Chloride of sodium .. .. | 5 "   |

Hang it up to dry, then float for half a minute on a fifty-grain solution of nitrate of silver; dry, print, tone, and fix as usual.—M. H.

5534. **Photograph on Silk.**—If "Willie" will write to me through you (you have my address herewith), I shall be glad to lend him a printed "clip" from the "Scientific American," giving directions for printing photographs on silk. As I have not yet tried the process, I cannot, of course, recommend it, so he must take it for what it is worth.—RURAL.

5534. **Photograph on Silk.**—Get the silk ready sensitised from Messrs. Arthur Schwarz and Co., Dashwood House, 9, New Broad Street, London, E.C. This material is known as "Schaeffer's photographic silk." The operations are just the same as for albumen paper.—U. B. SMART.

5534. **Photograph on Silk.**—To obtain prints on silk, satin, or other fabric, the following directions may be considered to apply to all:—

|                         |                   |
|-------------------------|-------------------|
| Tannin .. .. .          | 60 gr.            |
| Distilled water .. .. . | $\frac{3}{4}$ oz. |

Dissolve—

|                         |                   |
|-------------------------|-------------------|
| Common salt .. .. .     | 60 gr.            |
| Arrowroot .. .. .       | 60 "              |
| Acetic acid .. .. .     | $\frac{1}{2}$ oz. |
| Distilled water .. .. . | $\frac{3}{4}$ "   |

Dissolve the arrowroot by aid of gentle heat, add the remainder of the ingredients, mix the two solutions, filter; immerse the fabric, which should be washed to free it from all dressing, in this solution for three minutes, and hang up to dry. When thoroughly dry, sensitize on a bath of—

|                           |                    |
|---------------------------|--------------------|
| Nitrate of silver .. .. . | 50 gr.             |
| Distilled water .. .. .   | 1 oz.              |
| Nitric acid .. .. .       | $\frac{1}{2}$ drop |

Dry, print, and wash as usual, and tone in sulphocyanide bath. (Wall's "Dictionary.")—PERIODIC.

5535. **Enlarging.**—What "B. B." means to say is, can an enlargement be made by using the camera as a lantern, and dispensing with the condenser? No, a condenser must be used with artificial light, or only the centre of the picture would be properly illuminated.—EXPERT.

5536. **Enlarging.**—Why does not "Willie" try this for himself? The result of placing a double convex lens in front of a rectigraph would be to shorten the focus and most likely produce a blurred image.—EXPERT.

5537. **Toning.**—Acetate and chloride bath (Wall's):

|                          |        |
|--------------------------|--------|
| Gold chloride .. .. .    | 15 gr. |
| Sodium acetate .. .. .   | 360 "  |
| Chloride of lime .. .. . | 135 "  |
| Chalk .. .. .            | 360 "  |
| Distilled water .. .. .  | 15 oz. |

Add the acetate to the solution last. This bath gives warm black tones.—U. B. SMART.

5537. **Toning.**—Use the following toning bath, as recommended by the makers of Ilford printing-out paper:

|                              |                   |
|------------------------------|-------------------|
| Chloride of gold .. .. .     | $\frac{1}{2}$ gr. |
| Sulpho-cyanide of ammonium.. | 30 "              |
| Water (distilled) .. .. .    | 16 oz.            |

Do not remove the prints from the bath until you get a purple tone by transmitted light, and do not add gold to old bath, but make a new one when exhausted.—PEDAGOGUE.

5537. **Toning.**—You can get tones as dark as you like with their own formula for sulphocyanide bath.—R. A. R. BENNETT.

5537. **Toning.**—Wash the prints in clean water, and then tone in the following:—

|                                  |        |
|----------------------------------|--------|
| (A) Distilled water .. .. .      | 25 oz. |
| Acetate of soda .. .. .          | 1 "    |
| Into which pour a solution of 1  |        |
| per cent. of chloride of gold .. | 2 "    |

(B) In 10 oz. distilled water dissolve 2 drin. sulphocyanide of ammonia, and add 1 oz. solution of 1 per cent. chloride of gold. For toning, mix in the proportion of 20 oz. of A to 6 oz. of B, if possible the evening before using.—M. H.

5537. **Toning.**—You cannot do better than use the following, which will give you a rich dark tone:—

|                             |                 |
|-----------------------------|-----------------|
| Sulphocyanide ammonia .. .. | 30 gr.          |
| Chloride of gold .. .. .    | $\frac{1}{2}$ " |
| Water .. .. .               | 16 oz.          |

Make this bath up 24 hours before using.—ZEBRA.

5538. **Magnesium Ribbon.**—You will find about one foot of ribbon will be sufficient.—ZEBRA.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us before TUESDAY MORNING's post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED. AM. PHOT.

W. W.—The probable cause of your spots is insufficient washing between fixing and bleaching with mercury, and also after bleaching and before blackening, and after the same.

OUT OF FOCUS.—See answer in this column to E. C. H. last week. Use about  $f/11$  stop. To find out the distance to rack the lens out, let D = the distance of object, and  $f$  = equivalent focus, then as  $D : f :: f : x$ , all measurements in inches; e.g., let focus of lens be  $6\frac{1}{2}$  in., then

$$\frac{6 \times 6}{9 \text{ ft.}} = \frac{36}{108} = \frac{1}{3} \text{ in., distance to rack out the lens.}$$

If racked out for 9 ft., 20 ft. will be in focus.

J. GALE.—Medal sent on. You are eligible for the silver medal.

REV. F. PARTRIDGE.—We have tested your sulpho salt, and by neutralising the gold we had no difficulty to obtain good results.

PUZZLED.—Want of sharp focussing and movement of sifter is the reason of smudgy face.

W. T. P. T.—Letter by post.

LUX.—As long as you keep away from the fortifications, there is plenty of work to be done. We insert as a query also.

DON RALPHO.—After fixing, place the prints in a strong solution of salt and water, and then wash; adding one part of spirit to every four parts of fixing baths will help you too.

TORREADOR.—Choose either 1 or 2; both are first class makers; and a half-plate lens would cover whole-plate on stopping down.

WESTBURY.—A good enamel collodion can be made by dissolving—

|                          |                   |
|--------------------------|-------------------|
| Pyroxylin .. .. .        | $\frac{1}{2}$ gr. |
| Methylated ether .. .. . | $\frac{1}{2}$ oz. |
| Alcohol .. .. .          | $\frac{1}{2}$ oz. |

allowing to stand forty-eight hours and decant from any sediment.

FALK.—You are at liberty to send the practical work in as soon as you can get it done; pressure of space and work has prevented us from giving so much attention to the examination as we wanted to. With regard to your new idea, will you write us more fully; we will treat anything you say in strict confidence, but till we hear more fully we do not know whether you are not using an old idea. It ought to be very useful.

N. A. HENDERSON.—The fact of your friend having suggested a particular style of costume would not disqualify the prints.

S. RUNACLES.—We did not notice that your communication was addressed to anyone in particular, or it would have been inserted.

A. H. LEWIS.—The best plan for you to pursue will be to treat the stone as a black and white copying subject, and use a slow plate such as Mawson and Swan's "Photo-mechanical," and do not give too long an exposure; 10 sec. might be right with the plate mentioned above. In development, use for preference hydroquinone, with plenty of bromide of potassium in it, and continue development till the slightest sign of blocking or deposit appears, then instantly fix. Clear glass letters are what you want; never mind the density so much in development, then after fixing and washing well, you can intensify if necessary with Monckhoven's silver cyanide intensifier. To obtain the stone against a dark background, your only plan is to paint over the negative with red paint, then print as usual and out out the print thus made as a mask, allow it to blacken in sunlight, then print again, and remove the print from the frame, affix the mask accurately in position, and allow all the background to darken to the required depth in daylight, then tone and fix as usual.

J. E. ELLAM.—We hope to send your certificate off this week.

H. HALL.—It depends a good deal on the kind of shutter, but between the glasses would be best.

DUFFER.—The instantaneous shutter sold with the instanto set is quite suitable for your lens. If you would send us up a print or two we might perhaps help you more, but it is difficult to say anything definite till we see some results.

F. H. PARSONS.—The book will be out probably next month.

PORTRAIT.—The full aperture is  $f/12$ , probably you will find it necessary to use  $f/16$ .

J. N. K.—All your prints are over-exposed and suffer from halation, and are far too hard; that is to say, there is too much contrast. This is due to the use



of hydroquinone. Give less exposure, and try pyro, and let us see some more work presently. We have far worse work than yours in our competitions.

A. J. CHAMPNESS.—You would be perfectly satisfied with the lens you name for instantaneous work; no need to pay a higher price.

H. WATSON.—We cannot answer your query without testing the lens; we will try it this week and let you know. Thanks for enclosure.

F. W. KENT.—Many thanks for suggestion about bar—which we could not adopt this year now, but would next. (1) Gelatino-chloride paper would keep better in a calcium tube; if the calcium chloride itself touched the paper, a spot of white would show in the finished print, otherwise it is harmless. (2) Matt-surface celluloid is better than ground glass to use. Try the British Xylonite Company, Homerton, or Fitch, 34, Angell Road, Brixton, S.W.

A BEGINNER.—Provided the work is good, technically and artistically, a quarter-plate stands as much chance as a whole-plate. If you can distribute some copies of the paper we will send you some free.

SNAP SHOT.—(1) We certainly prefer No. 2, and should have it fitted with a Zeiss lens. (2) We know of no dealer who lets out hand-cameras. (3) The description is certainly taken from the catalogue, but the opinion expressed in the last few lines was, we thought, original.

LEWIS LORD.—(1) You give no information as to developer used. Keep the temperature of your solutions equal, and add one part of spirit to every four parts of developer. (2) Yes, a house would be admissible.

KI-NON.—Lancaster would make you a camera to any size you like, either with or without lenses and shutters. He makes a stereo Instantograph to take 183 by 114 mm. or  $7\frac{1}{4}$  by  $4\frac{1}{2}$  in.

T. MANSELL.—Very pleased to fall in with your suggestion.

A. F.—(1) Yes, the camera is a good one. (2) C lens by all means.

R. HALSTEAD.—The print is too deeply toned and wanting in brilliancy, and would be improved by printing under green glass. "Figure Study" means human figures other than pure portraiture. Your print is not up to standard.

C. CROWDER.—To find the apertures of stops, focus the sun or clouds, measure the distance between lens and focussing screen, and divide by the diameter of stop aperture.

—THE WIRRHIM.—Your negative is over-exposed. Try printing under green glass on gelatino-chloride paper. If you can read French or German, we can lend you some books, but if not, there were some articles in the AMATEUR PHOTOGRAPHER, vol. xii. You need not pull your microscope to pieces if you rig up a box on the end of the tube, placing the microscope on the ground. Can you call on us any time in the week?

J. S. T.—Printing in sunlight as a rule gives very flat prints. This fact is useful sometimes, but very rarely, only when a negative is a little too harsh.

BENJ.—(1) Over-exposure certainly tends to give softer pictures, and when carried too far, flatness; if you continue to use hydroquinone, carry development further. (2) We should certainly recommend you to try pyro in preference. (3) Try a pyro and soda developer. (4) 1 lb of hypo to 3 pints of water is strong enough. (5) It might be possible to give your negatives brilliancy by heating slightly with mercury, and then using sulphate of soda.

W. B. SMART.—(1) The camera will turn out good work. (2) Yes, point the actinometer away from the subject, not to it—if you look at the sun, the actinometer should be pointed there, also if you want to take your face. (3) No, anyone may order a copy of our Album. If you like to write a letter to paper about society, it shall go in. Always pleased to help you.

A. D. E.—Place your print in salt and water at once as they come from the printing frame, and then use

|                            |        |
|----------------------------|--------|
| Acetate of soda .. .. .    | 30 gr. |
| Bi-carbonates of soda .. . | 10 "   |
| Gold chloride .. .. .      | 1 "    |
| Water .. .. .              | 8 oz.  |

J. C. N.—We prefer C.

## Monthly Competition.

### No. 34, PORTRAITURE AND FIGURE STUDY.

PRINTS have been received from:—

|                         |               |
|-------------------------|---------------|
| H. T. Crowley .. .. .   | Sheffield     |
| R. C. Macleod .. .. .   | Heath         |
| G. Petrie .. .. .       | Dundee        |
| G. R. Ashley .. .. .    | N. Wales      |
| H. J. L. J. Masse .. .. | London        |
| R. A. Luck .. .. .      | Durham        |
| J. G. Tarran .. .. .    | London        |
| W. Beckwith .. .. .     | Leeds         |
| J. Sutherland .. .. .   | Newcastle     |
| A. Fogwill .. .. .      | Portsmouth    |
| G. Austin .. .. .       | London        |
| G. H. Westlake .. .. .  | Sheffield     |
| Miss T. King .. .. .    | Lincolnshire  |
| T. H. Orr .. .. .       | Dublin        |
| C. F. L. Barnwell .. .. | Staffordshire |

|                           |                   |
|---------------------------|-------------------|
| G. Lynam .. .. .          | Stoke-upon-Trent  |
| A. Dowdall .. .. .        | Exeter            |
| L. B. Beard .. .. .       | Somerset          |
| M. M. Pope .. .. .        | Warwick           |
| A. J. Champness .. ..     | London            |
| W. E. W. Waddington ..    | Malta             |
| J. Dudin .. .. .          | Enfield           |
| G. S. Pasco .. .. .       | London            |
| C. E. Smith .. .. .       | London            |
| G. H. Partington .. ..    | Ashton-under-Lyne |
| W. Y. Gowans .. .. .      | Blackburn         |
| J. Thomas .. .. .         | Glanorgan         |
| R. W. Copeman .. .. .     | Blandford         |
| A. J. Adams .. .. .       | Ambleside         |
| J. N. Williams .. .. .    | Westmoreland      |
| G. F. Wilson .. .. .      | Lonsdale          |
| S. T. V. Pallaviamio .. . | Italy             |
| W. E. James .. .. .       | Plymouth          |
| R. E. Stewart .. .. .     | Bradford          |
| A. Bates .. .. .          | Walsall           |
| T. Cartell .. .. .        | Birmingham        |
| C. Snow .. .. .           | Chesterfield      |
| W. Hirst .. .. .          | York              |
| H. Beaton .. .. .         | France            |
| R. Halstead .. .. .       | Rochdale          |
| G. Coulson .. .. .        | Sheffield         |
| C. W. Crowder .. .. .     | Sheffield         |
| W. Shepherd .. .. .       | Rochdale          |
| H. P. Henry .. .. .       | London            |
| H. M. Lomas .. .. .       | Minehead          |
| J. R. Hole .. .. .        | Minehead          |
| E. Griffiths .. .. .      | Cornwall          |
| C. Axtell .. .. .         | Monmouthshire     |
| W. Walker .. .. .         | Nottingham        |
| J. L. Sims .. .. .        | Edinburgh         |
| E. Mason .. .. .          | Bedale            |
| A. J. Goldring .. .. .    | Tufnell Park      |
| J. W. Gibbs .. .. .       | Reading           |
| F. R. Salmon .. .. .      | Cambridge         |
| A. Lewis .. .. .          | Southsea          |
| D. Butler .. .. .         | Leicester         |
| H. Meynell .. .. .        | Staffordshire     |
| Miss E. L. Candy .. ..    | Hants             |
| Miss M. Acton .. .. .     | Fau.              |
| W. H. Cooper .. .. .      | Bacup             |
| Miss J. Niblett .. .. .   | Ledbury           |
| R. K. Jowett .. .. .      | Aylesbury         |
| J. Calvert .. .. .        | Darlington        |
| W. A. Breddie .. .. .     | Aberdeen          |
| E. J. Alleyne .. .. .     | Bath              |
| J. H. Martin .. .. .      | Blackheath        |
| F. A. W. Whitmore .. .    | Chester           |
| H. Whitehead .. .. .      | Blackburn         |
| W. H. Birchenough .. .    | Macclesfield      |
| A. Goodliffe .. .. .      | St. John's Wood   |
| W. Bottom .. .. .         | Leeds             |
| M. I. Hands .. .. .       | Leeds             |
| H. Hemmingsway .. ..      | Rotherham         |
| W. T. Adams .. .. .       | S. Africa         |
| Miss M. A. Henderson ..   | France            |
| A. L. Spiller .. .. .     | Hampstead         |
| W. J. Farthing .. .. .    | N. Wales          |
| D. Horn .. .. .           | Glasgow, N.B.     |
| Miss M. Watson .. .. .    | Flourence         |
| L. M. Wall .. .. .        | Ashburton         |
| K. Griffith .. .. .       | Ripon             |
| F. Powell .. .. .         | Argyllshire       |
| J. W. Pattison .. .. .    | Darlington        |
| W. K. Hutton .. .. .      | Kilwinning        |
| J. E. D. Parker .. .. .   | Liverpool         |
| F. C. Harvey .. .. .      | Workop            |
| J. W. Evans .. .. .       | Wolverhampton     |
| A. Pitkethly .. .. .      | Leith             |
| W. B. Dart .. .. .        | Devonshire        |
| E. Richardson .. .. .     | Berkshire         |
| E. A. Culver .. .. .      | London            |
| G. A. C. Clavert .. .. .  | London            |
| G. H. Palmer .. .. .      | Bgham             |
| F. Micardo .. .. .        | London            |
| E. Dillon .. .. .         | Wychwood          |
| E. Greenleaves .. .. .    | Bournemouth       |
| C. Hunt .. .. .           | Reading           |
| B. Cooper .. .. .         | Reading           |
| J. T. Richardson .. .. .  | Nottingham        |
| E. M. Pritchard .. .. .   | Bedfordshire      |
| C. F. H. Hallett .. .. .  | London            |
| G. Mackie .. .. .         | Brechin           |
| Miss E. Bradshaw .. ..    | Pan               |
| S. Airey .. .. .          | Windermere        |
| G. F. Prince .. .. .      | Birkenhead        |
| F. W. Barbour .. .. .     | Lincs.            |
| A. Southall .. .. .       | Chester           |
| M. S. David .. .. .       | Fleetwood         |
| T. W. Milburn .. .. .     | Northumberland    |
| J. Warrack .. .. .        | Edinburgh         |
| T. G. F. Allen .. .. .    | Sheffield         |
| F. H. Stacy .. .. .       | Sheffield         |
| H. Macdonnell .. .. .     | Stockton-on-Tees  |
| M. MacMillan .. .. .      | Scotland          |
| S. D. Morgan .. .. .      | Isle of Wight     |
| Miss M. M. Down .. ..     | Ilfracombe        |
| J. E. Ellam .. .. .       | Yarmouth          |
| J. D. Dickson .. .. .     | Bucks             |
| Miss S. E. Douglas .. ..  | Perth             |
| J. Tims .. .. .           | Surrey            |
| G. T. Davis .. .. .       | Yarmouth          |

Owing to pressure on our space, the continuation of the list of competitors is held over till next week.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m. and other communications having reference to the Sale and Exchange) column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 8d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Cameras, etc.**—Watson's 8½ by 6½ Premier camera, four double dark slides, turntable top, tripod stand in case, complete, in two waterproof cases, cost £18, price £12; approval on deposit.—No. 262, office of this paper, 1, Creed Lane, E.C.

7½ by 5 bellows-body camera, swing back, drop shutter, sky shade, and six double dark slides, price £8; approval; deposit.—No. 263, office of this paper, 1, Creed Lane, E.C.

Merveilleux by Lancaster, good as new, 15s.—Cygnets, 7, Linscott Road, Clapton.

Lancaster's quarter 1890 Instantograph, three slides, all accessories, 52s.—Atkins, Riverside, Rickmansworth.

Fine whole-plate camera, all movements, and two double slides, price £5 5s.; deposit.—T. Ellingworth, Northgate Cottage, Oakham.

**Cameras, Lenses, etc.**—Kodak No. 5, folding, charged with film, and tripod, cost £13, for £9; 5 by 4 black band R.R. lens, iris diaphragm, aluminium mounts, splendid instrument, as new, list price £3 10s., for £2 10s.; Lancaster's Instantograph, quarter, lens, and shutter, quite new, 15s.—H. Orr, 57, Sackville Street W., Dublin.

Lancaster's quarter-plate 1891 Instantograph, lens, and shutter, as new, 15s.—S. Fisk, 1, Perryh Road, Acton, N.

**Enlarging Apparatus, etc.**—Lancaster's enlarging camera, 5 in. condenser, portrait lens, lamp glass cap, 2 guineas, including two 12 by 10 dishes, all in excellent condition.—Benest, 52, King's Square, Goswell Road, London.

**Hand-Cameras, etc.**—Stereoscopic Company's half-plate Dispatch hand-camera, with six double dark slides, Newman's patent shutter, best rapid rectilinear lens, in good working order, list price £17 17s., will sacrifice for £7 10s.—Can be seen at the Stereoscopic Company's, 106 and 108, Regent Street, W.

For sale, Griffith's stereoscopic hand-camera, can be used with tripod, single achromatic lenses, six double dark slides, view finder, equal to new, cost 45s., will take 35s., or exchange for pair stereo. lenses.—Scott, 32, Elswick Row, Newcastle.

Wanted to dispose of, Kodak camera, size 2, equal to new, charged 35 plates, cost £7, sell for 4 guineas.—Address, Miss H. Hewett, Resie Villa, Brentwood.

Shew's quarter-plate Eclipse hand-camera, with changing back, for 12 plates and one double slide, leather case, finder, etc., perfect condition, cost £7 15s. net, offered for £4.—Davis, 97, Church Road, Richmond, Surrey.

Lancaster's half-plate Rover hand-camera, carries 12 plates, fitted with See-Saw shutter, new this month, in perfect condition, £4 12s. 6d.—T. 72, Newtown, Whitehaven.

Optimus magazine hand-camera, rapid rectilinear lens, £5; Editor's approval.—M. Helliard, Dorset Villa, Yeovil.

For sale, American hand-camera, 4 by 5 plates, and film holders, leather covered, tripod arrangement, 45s.; Lancaster's quarter Instantograph, complete, two



double holders, 22s. 6d.—Atkin, 64, Marian Street, Gateshead-on-Tyne.

Stirn's valetcoat camera (metal), with 12 plates, only used six times, price £1; Frank's Presto camera, 12 plates, and developers, never used, price 8s.—Letters to Money, 2A, Oriental Street, Poplar, London.

**Lenses, etc.**—10 by 8 Ross rapid symmetrical, £6; 8 by 5 Ross portable symmetrical, £3 5s.; Laverne's rapid portrait cabinet, 30s.—Alfred Dewey, Sidcup.

Ross' No 3 portable symmetrical lens, 5 in. focus, 55s.; Taylor's half-plate R.R., Waterhouse, 40s., both perfect condition.—Davis, 97, Church Road, Richmond, Surrey.

Suter's combination set of lenses for half and whole plate, comprising three R.R., two W.A., and two single view lenses, complete in box, iris and rotating stops, list price £9 12s. 6d., offered for £5. Particulars on application.—Davis, 97, Church Road, Richmond, Surrey.

Ross' No. 3 carte lens, perfect condition, £6 10s.—Wilson, 29, Oakhurst Grove, East Dulwich, S.E.

Optimus wide-angle symmetrical 7 by 5, quite new, cost 52s. 6d., for sale 42s. 6d.—Albert Durn Wotton-under-Edge, Glos.

Ros' half-plate rapid symmetrical, quite new, £3 5s.—R., 5, Park Road, Crouch End, N.

Best London-made half-plate camera, all movements, with three double hinged backs, almost new, £3 10s.; Optimus 9 by 7 R.R. lens, with iris diaphragm, quite new, splendid instrument, £3 15s.—F. Gibbons, 32A, Lea Terrace, Blackheath, London.

7 by 5 rapid rectilinear by A. Bourgoignie, been used on whole-plate, as new, 28s., cost double; approval.—Avery, 45, Prince of Wales' Road, Haverstock Hill.

Swift's rapid Paragon lens, 10 by 8, equal new, £5 5s.; approval.—Bonne, 7, Langney Road, Eastbourne.

**Lenses:** Chambers' whole-plate R.R., splendid instrument, 60s.; Ross' 6 in. portable, 60s.; Taylor's whole-plate eingle, 35s.; warranted.—137, Westgate, Gloucester.

Dallmeyer 2B lens, £5 10s.; Lerebours whole portrait lens, £3 5s.; Ross 3½ by 6½ W.A. lens, £3 10s.; whole portrait lens, French, £2 10s.; Thornton-Pickard time and instantaneous shutter, 1½ in., 12s. 6d.; Lancaster's 12 by 10 instantaneous lens, £2 3s.—J. Biddle, 97, Medlock Street, Manchester.

Lancaster's 10 by 8 patent rectifig lens, scarcely used, cost £5, price £3 15s.; approval; deposit.—Letters to Money, 2A, Oriental Street, Poplar, London.

**Negatives.**—Small parcel of cloud negatives, 10 by 8, cabinet border negatives, and vignette papers, cheap.—P., 3, Hinkley Road, Leicester.

**Sets.**—Lancaster's Merveilleux quarter-plate camera, complete, lens, slide, tripod, shutter, good as new, 15s.—Wite, 8, 17, Hope Place, Liverpool.

Half-plate best London-made camera, three double slides, tripod, and R.R. lens, as new, bargain, 85s.—John Slade, Slad Road, Stroud, Glos.

Underwood's half-plate Instanto set, good as new, only 61s. 6d.—H. Rowe, Wallbridge, Stroud, Glos.

First-class half-plate set, light Kinnear camera, four backs, turntable, three-fold sliding stand, Casket, Taylor and Hobson's lenses, Sands and Hunter's shutter, working between lenses, cases, etc., complete, 11 guineas, cost double.—M. B. Mallett, 227, Finchley Road, N.W.

Superior Spanish mahogany quarter-plate camera, all movements, two double backs, Optimus R.R. lens, all quite new, 70s.; also a capital mahogany half-plate camera, all movements, one double back, and one-joint ash tripod, all in good sound condition, 40s.; seen by appointment, or deposit.—Middleton, 2 and 3, Aldgate, City, E.

15 by 12 camera, London Stereoscopic make, very complete outfit, nearly new, very little used, price moderate.—Sir G. Clark, Penicuik House, Penicuik, N.B.

Lancaster's half-plate International set, complete, with two double slides, carriers, tripod, printing frames, etc., bargain, 70s.—Sewill, 23, Spital Street, Buxton Street, London.

Lancaster's quarter-plate Instantograph camera, two double dark slides, lens, tripod, and waterproof bag, in splendid condition, £2; old-fashioned wet-plate camera with rackwork portrait lens, dipper, and dish, 10s.—Hutchinson, Mercer Row, Louth.

Lancaster's half-plate Instantograph, lens, tripod, legs (new, cost 30s.), two shutters, three double backs, three printing frames, mantle, scales and weights, ebonite tray, four dices, two dropping bottles, two measuring glasses, focussing glass, new light-tight plate box, book, thorough condition, principally new, £3; deposit.—Edwards, Bishop Auckland.

**Sundries.**—Complete photographic library. "The Studio and What to Do in it," "Picture-Making by Photography," "Pictorial Effects in Photography," "Art and Practice of Silver Printing" (all by H. P. Robinson), "Photography with Emulsions" (Abney), Burton's "Modern Photography," "Practical Portrait Photography" (Heighway), "Photographic Printer's Assistant" (Heighway), "Esthetics of Photography" (Heighway), "Enamelling and Retouching" (Pique), also *Photographic News* for 1887, 1888, and 1889, *AMATEUR PHOTOGRAPHER* for 1890 and 1891, *Photography* for 1891, complete, and clean. Will give the above for a good whole-plate rectilinear lens, about 11 or 12 in. focus.—Wright Brook, Photographer, Shepley, Huddersfield.

£30 photographic outfit for 1s. 6d. ! Every amateur, professional, and assistant should send stamp for particulars.—Address, Outfit, 73, North Street, Colchester.

For sale, magic lantern, 5 in. condensers, three-wick lamp, perfect, 40s.—Hetherington, 39, Stanhope Street, Newcastle-on-Tyne.

Safety, must sell, going away, latest pattern Diamond, cushion, £7 10s., worth £16; approval anywhere.—Johnson, 28, Bedford Place, Park Lane, Leeds.

Six packets Ilford ordinary stereo plates, 7s 6d.—Letters to Money, 2A, Oriental Street, Poplar, London.

Valuable bargain! Fine mellow-toned violin in perfect preservation, suit lady or gentleman for orchestral or solo playing, complete, with bow and baize-lined case, take 15s. 6d. for all; violin alone worth double; money willingly returned if not approved; about 20s. worth of music (unsold) given in free.—Mrs. Graham, College Buildings, Ipswich.

Three metal backs (Tylar's) and adapter for half-plate Instantograph, also Griffiths' guinea hand-camera, lot 20s. Wanted, mahogany back, half-plate.—No. 264, office of this paper, 1, Creed Lane, E.C.

Ashford tripod in case, suit whole or 10 by 8, good condition and rigid, cost 30s., take 17s. 6d.; also half-plate bag, as new, 3s. 9d.; no approval. Call and see, at 3, Edmund Place, Aldergate.

**Tripod.**—Lancaster's 1891 tripod (Instantograph), excellent condition. What offers?—S. Austin, 13, Thicket Road, Anerley.

## WANTED.

**Cameras, etc.**—Wanted, half-plate Instantograph with double backs, no lens or stand; approval.—B., 4, Charendon Road, Lewisham.

Wanted, half-plate long-focus camera and double dark-slide, book pattern; cheap; approval.—O. Dwyer, Golden, Cashel.

**Dark Slides.**—Tylar's metal slides, quarter-plate.—W. High, 62, Felloe Street, Kingland Road, London.

**Hand-Cameras, etc.**—Wanted, good hand-camera; exchange 18ct. gentleman's diamond ring, new, cost £7.—17, Sedan Street, Walworth.

Quarter and 5 by 4 hand-cameras.—Clark, Gordon Camera Club, Braintree.

Wanted, No. 3 or 4 Kodak, Junior preferred; approval.—F. P. Bayley, 88, King Street, Manchester.

**Lenses, etc.**—Wanted, quarter-plate Lancaster's Silver Ring Rectifig lens.—Dr. Hart, Harborne, Birmingham.

Wanted, Ross' No. 1 portable symmetrical, 3 in. equivalent focus; approval; write lowest price.—Johnson, Locking, near Weston-Super-Mare.

Wanted, 8 by 5 or 10 by 8 R.R. lens, Beck's, or any good maker; particulars, with lowest price; approval. H. Hamer, Beeston Hill, Leeds.

**Negatives.**—Wanted, some negatives, quarter or half-plate size, of some of the principal views of London.—W. K. Potter, West Deyne, Uppingham, Rutland.

**Sets.**—Wanted, half-plate camera up to date, tapering bellows, with all movements, double rapid rectilinear lens, iris diaphragm, dark slides, and tripod; must be in good condition and cheap; also open to purchase other accessories.—12, Dudley Terrace, Grantham.

**Shutter, etc.**—Stereoscopic, instantaneous and time, for 2½ in. hoode.—Clarke, Bookseller, Devizes.

**TO LET,** Apartments for an Amateur Photographer, one sitting and two bedrooms, and a dark-room properly fitted, 9 ft. by 4 ft.—Mrs. Morley, 28, Hugo Road, Tufnell Park, N.

**ENERGETIC BUSINESS MANAGER,** with Highest References from West-end studios, offers his Services to Gentlemen wishing to establish a good-class Portrait Business.—Apply, by letter, to 261, office of this paper, 1, Creed Lane, E.C.

**TO AMATEUR PHOTOGRAPHERS.**—Advertiser, young, married, no children, occupying cosy house in healthy northern suburb (25 minutes' rail to Broad Street), wishes to meet with young gentleman, engaged in City, interested in photography, to share HOME and use of dark-room.—Address, Photography, care of Eagles and Co., 1, Philpot Lane, E.C.

**WIMBLEDON.**—SEMI-DETACHED VILLA, two sitting rooms, five bedrooms, bath room, conservatory, summer room (20 ft. by 14 ft.), expensively laid out garden with fountain and summer house, rent £30. Suit photographer. North-east light, and fitted dark-room, conservatory, etc. Tenant's property cost over £150. Will be sold for £50.—Doubleday, 37, Wallbrook, E.C.

**EASTMAN'S MATERIALS COMPANY.**—A few 10 per cent. PREFERENCE SHARES for Sale, having priority over £200,000 Ordinary Stock.—Alpha, c/o Hazell, Watson, and Viney, Ltd., 1, Creed Lane, E.C.

# STEREOSCOPIC

SIR DAVID BREWSTER, speaking of Stereoscopic Pictures, said, "Although these pictures are small when seen by the unassisted eye, their apparent magnitude, when rightly taken and placed in the instrument, is exactly the same as the original appeared to the photographer. Those who desire to have larger pictures can easily obtain them from the small binocular ones, which are generally so distinct that they may be enlarged many times. For these reasons I would recommend the photographer always to take binocular pictures. He has the choice of two negatives, and the means of giving them the relief which is so much prized in the Stereoscope."

Although it is 35 years since the above remarks were made, no better advice could be given to-day. Everybody knows that the facilities for Enlarging have been wonderfully advanced. But to be able to make Enlargements is not the highest claims for Stereoscopic Photography—it is the beauty of the results when viewed in the Stereoscope.

I could record scores of instances of. Amateur Photographers expressing their dislike to Stereoscopic pictures, but who have, within the last two years, entirely changed their opinions, and now never take any other than Stereoscopic pictures. As a matter of fact, they had based their ideas and formed their prejudices on some old paper slides or old-fashioned Stereoscopes which had been lying about since they were boys, and had never seen by a good Stereoscope the beautiful Transparencies such as it is possible to make nowadays on Mawson's and Thomas's Plates. Others, again, thought there was some fearful complication or tedious method of mounting; but, after reading the *Stereoscopic Manual* (post free 1s. 2d.), they discovered there was nothing of the kind, and that it is easier to make Stereoscopic Transparencies than good Lantern Slides, and also that their friends admired them more than any other kind of photographs.

By referring to my Catalogue, it will be seen that the price is no higher than any other well-made Camera.

*Camera, Cabinet Size,* 6½ by 4½, for Stereoscopic Single View, and Lantern Work, with Six Barnett's Patent Dark Slides, Patent Stereo Division, extra Front Board, etc., £5 15s.

*Pair Lenses,* with Rotating Stops, the best that money can command, £2 10s.

**W. I. CHADWICK,**  
2, ST. MARY'S STREET,  
MANCHESTER.



# The AMATEUR PHOTOGRAPHER

Telephone No. 1645  
Telegraphic Address: VINEY, LONDON

Office: 1, Creed Lane, Ludgate Hill, London, E.C.

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FRIDAY, APRIL 1, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare*.

*The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.*

**OUR VIEWS.**—Phot. Soc. India Exhibition—American Lantern Slide Exchange—A Special Honour—Birmingham Phot. Soc. Exhibition—Provincial Photographic Societies—The Camera Club Conference.

**LETTERS.**—Correct Exposure and the Speed of Plates (Wormald)—A New Washer (The Smith)—A Correction (J. A. Manton)—The International Annual (Harrison).

**ARTICLES.**—Photographic Procedure (Wall)—The Employment of Photography in Reconnaissance (Davies)—Elementary Photography (Hodges)—Tips Economical (Massé)—Pressure Gauges (Budenberg)—The Lantern and How to Use It—(Goodwin Norton)—Uranium Toning (S. H. Fry).

**APPARATUS.**—Fallowfield's Celloidin Paper—Pausodonoptic Camera—Edwards' Isochromatic Films—A New Celluloid Film—Scanlan's Film-holder.

**SOCIETIES' MEETINGS.**—Bournemouth—Bristol—Cardiff—Eastbourne—East London—Great Yarmouth—Hackney—Herefordshire—Holborn—Ireland—Kensington—Lowestoft—North Middlesex—Putney—Richmond—Sheffield—South London—Wigan—West London—Wolverhampton.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

**TERMS OF SUBSCRIPTION**—  
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POSTAL UNION ..... " " 8s. 6d..... " " 15s. 0d.  
OUT OF POSTAL UNION .. " " 7s. 9d..... " " 15s. 3d

**TRADE ADVERTISEMENTS** are received up to Tuesday morning.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE AND EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

**"Amateur Photographer" Monthly Competition No. 35.**—  
"INLAND SCENERY, WITH OR WITHOUT FIGURES." Latest day, April 25th.—Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, May 13th.)

THE Photographic Society of India intend holding an exhibition at the close of the year, which should receive, we think, good support from our readers; the following are the chief points of the prospectus:—

"An international exhibition will be held under the auspices of the Photographic Society of India, in Calcutta, early in the month of December next. The exhibition will embrace every branch of art and manufacture connected with photography, and will thus afford to those who make a study of the art-science, whether professionally or otherwise, an opportunity of becoming acquainted with all the most recent improvements and developments introduced by home and foreign firms.

"Provided the judges deem the exhibits of sufficient merit, the following medals will be awarded, viz.:—Five gold medals, fifteen silver medals, fifteen bronze medals. Of these some will be reserved as follows:—For professionals of the world: One gold medal. For amateurs of the world: One gold medal, five silver medals, five bronze medals. For amateurs of India and Burmah and amateur members of the Photographic Society of India: One gold medal, five silver medals, five bronze medals.

"In addition to the above, a special medal will be given for the best photograph in the exhibition. It is proposed, provided they fill, to medal the best in each of the following classes:—Class 1. Landscapes, architecture, and interiors. Class 2: Portraits and groups. Class 3: Genre pictures and studies. Class 4: Photographs of objects in motion. Class 5: Lantern slides. Class 6: Photo-mechanical processes. Class 7: Apparatus and appliances. No exhibitor shall take more than one gold medal.

"The undermentioned gentlemen have been elected by the members of the society to act as judges, and have consented to serve:—The Honourable Sir Comer Petheram, Q.C., Chief Justice of Bengal; Colonel J. Waterhouse, S.C., Assistant, Surveyor-General of India; Colonel M. W. Rogers, R.E., Assistant, Surveyor-General of India; W. H. Jobbins, Esq., Superintendent, Government School of Art, Calcutta. There shall be no appeal from the decision of the judges."

"Photographic lantern slides will be shown by means of the society's optical lantern during the exhibition. The loan of slides for this purpose is invited; they must not exceed 3½ in. in height and, to enable the Committee to select and arrange them, must be delivered not less than one week before the opening of the exhibition.

"1. Intending exhibitors must send the following particulars to the exhibition committee not later than November 15th, 1892:—(a) Name and address, and state if professional or amateur; (b) class or competition; (c) titles of pictures for catalogue; (d) particulars of any special process employed; (e) how much of the work is exhibitor's own; (f) prices of pictures, if for sale; (g) if not for sale, precise instructions should be given as to disposal after close of exhibition. Foreign exhibitors are specially invited to contribute. The Society will provide frames during the exhibition for photographs approved by the judges. There will be no charge for wall space. English and European exhibits should be despatched not later than October 1st, and those from America a fortnight earlier.

"2. All goods and pictures, carriage paid, should be addressed to the Exhibition Committee, Photographic Society of India, Asiatic Society's Buildings, Calcutta, and must reach them not later than November 15th, 1892. At the back of each frame must be written the name and address of the exhibitor, with the title or description of the photograph, and the number (if there be more than one) to



which it refers in the entry form. Each frame or picture should have the exhibitor's name, and the title of the picture, neatly inscribed, and this only. Oxford frames and photographs already publicly exhibited in Calcutta will not be admitted. Negatives and transparencies, photo-mechanical prints, photographs of purely scientific interest, and photographs coloured by scientific or mechanical means will be admitted. Photographs coloured by hand will not be admitted. Lantern transparencies should, if possible, be fitted in a frame to stand upon the table; if not removable, duplicates should be sent for exhibition in the optical lantern. Lantern slides will be eligible for award only when both the negatives and slides are the work of the exhibitor."



WITH reference to our note in last week's issue about the American Lantern Slides, it may save a little trouble and vexation if we state that the size of the slides is 4 by 3½ in., and that therefore the ordinary form of sliding carriers will not be suitable. The following dates are already booked:—

|                           |                        |
|---------------------------|------------------------|
| April 2 .. Rossal School. | April 22 .. Holborn.   |
| " 6 .. Blackheath.        | " 30 .. Putney.        |
| " 9 .. Yarmouth.          | May 10 .. East London. |
| " 12 .. Guildford.        |                        |



THERE was, our readers will doubtless remember, some little grumbling at the non-awarding of any medals at the Vienna Photographic Exhibition held last summer, but rather a high compliment has been paid to a well-known hand-camera worker, Mr. A. R. Dresser. Her Imperial Highness the Archduchess Stephanie of Austria expressed a wish to have a copy of one of this worker's enlargements exhibited at Vienna, and has now expressed her thanks in the shape of a handsome gold scarf pin, consisting of her own monogram, set with rubies and diamonds, surmounted by the Austrian crown.



WE hear that the exhibition of the Birmingham Photographic Society, which will be held on April 5th, 6th, and 7th, in the Y.M.C.A. Rooms, Needless Alley, has been very well supported by exhibitors, nearly 500 photographs, the work of about fifty members, having been sent in. The judges are a goodly band of well-known men—H. P. Robinson, Geo. Bankart, F. Sutcliffe, Paul Lange, etc.—and they have the right to withhold the awards if need be. We shall hope to be able to give a report of the exhibition as soon as it is opened.



WHILST some photographic societies seem to flourish and increase, performing useful work, we find, on the other hand, that others gradually dwindle away into decrepitude before many years are past. The last example is the Chelmsford Camera Club, about which our correspondent says, "The Chelmsford C. C. is no more. Our numbers being hardly sufficient to make the club a working success, it has been thought best to dissolve." It is curious that provincial towns do not seem to have sufficient energy to keep a society going. One or two have lately become defunct, and we hear several others are in a like condition.



#### THE CAMERA CLUB CONFERENCE.

THE second day's proceedings were opened by Mr. J. B. Spurge, who exhibited Clarkson and Spurge's safety gauge for indicating the pressure in a gas cylinder; the interior of the new gauge is filled with a liquid which is practically incompressible, thus preventing the access of gas to the gauge, and thus reducing the chance of explosions. At the same time Mr. Spurge explained an improvement in his sensitometer, and exhibited results which showed, in opposition to Messrs. Hurter and Driffeld, that negative gradations could be changed.

Mr. H. P. Robinson's paper on "Paradoxes of Art, Science, and Photography" was read by Mr. George Davison, and the paper itself was rather a paradox. The whole paper is worth reading, but we cannot do more than give a few brief extracts now,—

"It is clear, then, that a method that will not admit of the modifications of the artist cannot be an art, and therefore is photography in a parlous state if we cannot prove that it is endowed with possibilities of untruth. But they who, looking, perhaps, only at their own limited experiments, say photography cannot lie, take a very narrow view and greatly underrate the capabilities of the art. All arts have their limits, and I admit that the limits of photography are rather narrow; but, in good hands, it can be made to lie like a Trojan. However much truth may be desirable in the abstract, to the artist there is no merit in a process that cannot be made to say the thing that is not. \* \* \* \* \*

"It must be confessed that it takes considerable skill to produce the best kind of lies. It is in the hands of first-class photographers only—and perhaps the indifferent ones—that photography can lie. With the first, possibly, graciously; with the latter, brutally. The photographers of only average attainments, and such as we should get turned out in quantities by an art-less Institute, seldom get beyond the plain, naked, uninteresting truth. Yet I think that many will agree with me that the very good and the very bad are much more interesting than the mediocre. That the best are interesting is clear; that the worst are often the cause of a good laugh is the experience of all; it is only the middling good that induce indifference. \* \* \* \* \*

"A writer innocent of the resources of the art, and wishing to depreciate it, makes a point of the photographer having no control over the action of the developer so as to produce the variation from nature he desires. I can only reply that among my own pictures there is scarcely one that does not owe a good deal of any merit it may have to control of the developer. The possibilities of control were greater, perhaps, in the collodion process than the gelatine, but we are speaking of the capabilities of photography, not of any particular process. The scientist may prove, beyond any possibility of doubt, that the relative values cannot be altered in development, but the photographer knows that variation in development varies the appearance of his results, and that should be quite enough for him. It is so difficult, and yet so tempting, to 'find out what cannot be done, and then to go and do it!'

"I feel serious promptings here to have a fling at science that will surely bring down the wrath of our President on my unfortunate head. I will try to ameliorate him by saying that science demands our greatest respect. No one can have more reverence for science than I have myself—when it keeps its place. But we are suffering from science, and fancy is dying out of the land. It is doing serious harm to photography as a picture-producing art. When a student ought to be studying the construction of a picture, and developing in his soul the art of lying, he is led away by the flickering *ignis fatuus* of science, and goes mad over developers. 'Another new developer' has more effect on the tender feelings of the brethren of the camera than would the advent of a poet-photographer. This suggests a variation on Rejlander's 'Two Ways of Life.' One youth travels along the pleasant and virtuous walks of art, not listening to the Sirens of Fact; but dozens of others are decoyed to the worse way, and are soon lost in the seductive vanities and subtleties of science. They last long enough, perhaps, to modify a developer—with which science, however, tells them they can do little or nothing—and are heard of no more, except in the multitudinous platitudes used in the endless discussions of abstractions in society papers; and the scientific dream of the future is an Institute of Photography from which Art is to be excluded. Art will be very glad to part company. \* \* \* \* \*

"In conclusion, let me express the pleasure I feel in being afforded the fascinating opportunity of saying a few humble words in praise of lying in a room which has been saturated with truth and fact for more than a hundred years—ever since, indeed, Barry 'restored the antique spirit in art' by painting his anachronisms on the walls, and from which building emanates the prospectus of the Chicago Exhibition, which honours our art with the crowning paradox of classing photography with Instruments of Precision."

It was, of course, only to be expected that this paper should call for some comment, and

"Mr. J. Pennell said Mr. Robinson's lies were extremely amusing. He told lies without knowing it, although he did not mean to. The biggest lie of all was when he said impressionists had produced nothing worth seeing. Velasquez, Raphael, Titian, and, in fact, all great men were impressionists. Their impressionism was their way of looking at things. Art was intimately connected with science, because artists went about their work in a scientific way, although they hid the fact."



"The President objected to the term 'scientist,' which he hated, and he considered Mr. Robinson had prostituted the English language in using the term. He (the President) would rather be called a tomfool than a scientist. He had no pretension to art, but as Mr. Robinson had had his fling at science, he (the President) thought a response was demanded of him. Mr. Robinson had not treated science with respect. What was truth? Truth in art was something totally different to truth in science. As a scientific man, he was bound to say that, if you analysed the works of artists, it was wonderful how scientifically incorrect they were. Perspective had improved, owing to photography. Artists had painted moonlight pictures of mountains hundreds of miles high. That was not truth, and science proved the falsity. Photography was invented by science, and art would not have had any truthful characteristics but for science. When painters wanted information about their pigments, to whom did they go? Not to artists, but to scientific men. Artists could not do without science, and never would. The longer they lived, the more highly civilised would they become, and the more art would depend on science, and the more artists would have to paint according to the dictates of science."

Mr. H. H. Stannus next delivered a very interesting and instructive paper on "The Uses of Photography to the Decorative Artist," in which he suggested how photography could be applied to decorative work. The charm of photographs was their quietness of tone. For filling up windows photography offered an admirable field, but he did not think it could yet compete with the brush of the artist or the productions of the colour. On textile fabrics the detail was lost, and the absence of a variety of colour was a drawback. Photography was, as they knew, of great use in draughtsmanship for enlarging or reducing. Adverting to the discussion as to what was truth, he said truth need not be ugly. Science was a matter of fact, and art of appearance. He regretted to hear untruthfulness defended by a photographer, and said that retouching should always be acknowledged. In archaeology and architecture photography was of much service; and for travelling students the camera was a great help. He advised photographers to take their architectural views to scale by putting a two-foot rule on some part of the picture, and also always to carefully note the aspects of buildings for future reference, and concluded by suggesting the establishment of a record office with photography to supply the material.

The next speaker, Mr. H. Blackburn, in his paper, "The Debt of Art to Photography," acknowledged the services of photography in reproducing pictures, etc., and said that the photographs of Thomas Carlyle represented the man and the historian far better than the portraits by Millais, Watts, or Whistler. The subject of the Muybridge pictures had cropped up again that afternoon, and he would endeavour to settle it once for all. He and several friends once went out courting, to compare notes as to the impression produced by a travelling hare, and they agreed that the appearance of the extended limbs of the hare during an isolated moment of time was a mere impression. The animal, as it were, floated—as they saw it.

Mr. C. H. Bothamley then briefly dealt with "Some Points in Connection with Development," and stated that in his opinion Messrs. Hurter and Driffield had not proved the truth of their statements.

The annual dinner of the Camera Club was held in the evening at the Monico Restaurant, more than a hundred sitting down, Captain Abnsy being in the chair. The toast of "The Club" was proposed by Mr. Henry Blackburn, and responded to by Capt. Abney; "The Visitors," acknowledged by Mr. H. Van der Weyde; and "The Photographic Press," replied to by Mr. J. Traill Taylor, Mr. H. Sturme, Mr. E. J. Wall, Mr. W. Welford, and Mr. Hay Taylor, Mr. Davison responding for the toast of "The Officers and Council." Recitations and vocal and instrumental music were given at intervals, and the proceedings did not terminate till a late hour.

## Letters to the Editor.

### CORRECT EXPOSURE AND THE SPEED OF PLATES.

SIR,—In my "Index of Exposure" I have hitherto given a speed-table of plates, compiled on information supplied by the plate-maker in each case, and based on sensitometer numbers. Six editions of the book have now passed into the hands of the public, who have by this time, gradually but surely, confirmed the opinion expressed in my first edition, that sensitometer numbers are hopelessly and entirely unreliable.

This being so, I propose in the forthcoming seventh edition to omit the plate tables in the form in which they have hitherto appeared, and substitute what I will call an

#### EXPERIENCE TABLE,

compiled from the actual experience of users of the plates, in place of the manufacturer's quotations based on sensitometer numbers, or (as in many cases) on mere guesswork, in which the "wish" to have a high speed representation has been "father to the thought," when quoting for publication, in a list intended to show correct speeds, but to a large extent inaccurate, because regarded as comparative and competitive.

To enable me to prepare this experience table, I ask your kind assistance in placing my request for information before the many thousands of your readers who have for several years used the "Index" Tables in connection with the various plates; and I shall be greatly indebted to all such if they will oblige by sending me through the post, to Sutton, Surrey, an early reply to the following questions:

1. What plates do you use?

2. What "number of times" have you found them to be on the basis of Wormald's tables for thirty times plates?

By kindly complying with this request, they will render public service in helping to a better knowledge of correct exposure, without which the pursuit of photography has so frequently been found uncertain and disappointing.—I am, Sir, yours truly,

A. R. WORMALD.

P.S.—The new table will only give collated results. In no case will the name of any correspondent be printed.

\* \* \* \*

#### A NEW WASHER.

SIR,—The following method of washing prints is one I have used for many months past, and possibly its simplicity and effectiveness may commend it to some of your readers. I use an ordinary lavatory basin about six inches deep, and in place of the usual brass plug a piece of stout rubber tubing four and a half inches long fits tightly in the aperture and stands erect in the basin. Half an inch or so from the lower end two or three small holes are made with a red-hot knitting needle or skewer, and the upper end of the tube is deeply serrated by cutting out triangular pieces with a knife. When in use the water remains at a height of about four inches, the excess running off down the pipe, and the serrated edge prevents any prints from stopping the overflow and causing a domestic deluge. The small holes at the bottom slowly but surely carry off the heavier hypo-laden water, and the water may safely be left slowly running for a whole night without fear of finding the house minus a ceiling in the morning. A very small stream suffices to keep the water up to the top of the pipe, and as a hypo-eliminator the arrangement leaves nothing to be desired.

THE SMITH.

\* \* \* \*

#### A CORRECTION.

SIR,—In the last issue of the AMATEUR PHOTOGRAPHER I am described as being the President of the Sheffield Optical Lantern Society. My term of office has recently expired, and the error has evidently accidentally arisen from the fact of the arrangements for the Nottingham lecture having been made during my Presidency. Mr. Draper is now the President.—I am, yours truly,

J. A. MANTON.

\* \* \* \*

#### THE "INTERNATIONAL ANNUAL."

SIR,—I shall feel obliged if you will kindly allow me to inform contributors and others, through the medium of the AMATEUR PHOTOGRAPHER, that the date of publication of the "International Annual" of "Anthony's Photographic Bulletin," has been altered from June to December.—Yours, etc.,

W. J. HARRISON.



## Apparatus.

### FALLOWFIELD'S CELLOIDIN PAPER.

JONATHAN FALLOWFIELD, of 146, Charing Cross Road, W., has introduced a celloidin paper which gives very good results, full of detail and giving fine tones with almost any toning bath, and by using the ready made solution, supplied by Fallowfield, we have been enabled to obtain exceptionally rich tones. The following are the directions:—

"The striking characteristics of this paper are, it can be dried directly after washing between blotting paper. Can be burnished precisely as albumenized paper. Wonderful keeping qualities. This paper is exceedingly sensitive, so that great care must be taken so as not to get exposed to light before printing. To print, proceed in precisely the same manner as for albumenized paper, but carry on same until the shadows are decidedly bronzed, as the fixing bath has a decided tendency to bleach, and if not printed very deep you are apt to get dull results, but if it is done as shown above, bright, clear, crisp, and vigorous results will be obtained. Any of the combined toning and fixing baths for emulsion papers can be used, but the following (which is sold ready for use, at 2s. 3d. the pint) is recommended.

|                                            |     |     |     |                 |
|--------------------------------------------|-----|-----|-----|-----------------|
| Distilled water                            | ... | ... | ... | 20 oz.          |
| Hyposulphite soda                          | ... | ... | ... | 4 "             |
| Ammon. sulphocyanide                       | ... | ... | ... | $\frac{1}{2}$ " |
| Acetate lead                               | ... | ... | ... | 1 drm.          |
| Nitrate lead                               | ... | ... | ... | 1 "             |
| Powdered alum                              | ... | ... | ... | 1 "             |
| Citric acid                                | ... | ... | ... | 1 "             |
| Chloride of gold solution (1 gr. in 1 dr.) | ... | ... | ... | 4 "             |

When this is first mixed it becomes turbid, but soon settles when standing for a day, and is then ready for use. Same can be used over and over again until exhausted. Mind the following points: Do not wash before putting into toning bath, put straight from the printing frame; after desired tone has been obtained, wash well for fifteen to twenty-five minutes. Do not get prints on top of each other in toning bath, or imperfect toning will result."

The great advantages of this paper are that washing for elimination of hypo, &c., is much shorter than with gelatin-chloride paper, and provided the film is not actually bent sharply across, it will stand a great deal more rough treatment.

### PAUSODONOPTIC CAMERA.

Wood Bros., of 73, Lord Street, Liverpool, and 14, Bartlett's Buildings, Holborn Circus, E.C., have introduced a very high-class instrument in this camera, which has extra long double extension, with wide-angle movement, which can be instantly clamped by means of two small wedges, a double swing, and reversing back, rising and falling front. The bellows are practically square, and thus obviating any chance of cutting off part of the picture. A brass turn-table is let into the base board, and a three-fold walnut stand, with sliding legs, is provided. The mahogany is well seasoned and of very fine grain, and the whole is of first-class workmanship. The half-plate size weighs 3 lb., and measures, when closed,  $8\frac{1}{2}$  by  $2\frac{1}{2}$  inches.

### EDWARDS'S ISOCHROMATIC FILMS.

B. J. Edwards and Co., of The Grove, Hackney, N.E., have forwarded for trial samples of their Isochromatic films. They are sufficiently stout to keep flat in an ordinary dark slide by placing a sheet of cardboard behind them, and are amenable to ordinary treatment in developing without the aid of frames or holders. It is hardly necessary for us to speak of the quality of the emulsion, that being so well known, as precisely the same is used as on the well-known dry-plates.

We have found considerable advantage in using these films for instantaneous hand-camera work, especially in conjunction with Edwards's "One Solution Snap Shot Developer," which is of great energy, and very convenient in use, as it merely requires diluting with water according to the exposure. The developer is cleanly in use, and gives soft, delicate negatives, even in cases of under-exposure. When diluted it keeps for some time, may be used over and over again, and does not stain the fingers. The combination of films and developer will greatly reduce the weight of the tourist and render the work of the hand-camera man easier. The Isochromatic films are the same price as the plates.

### A NEW CELLULOID FILM.

Messrs. S. Guiterman and Co., of 35 and 36, Aldermanbury, E.C., have submitted for our notice a specimen of their new

rollable celluloid film, which they have now perfected after long and expensive experiments. The film is very even and free from defects, and is matt one side, and can be obtained in 200 ft. rolls about  $20\frac{1}{2}$  in. in width. The firm are well known as the makers of sheet celluloid, and this new rollable film is precisely the same as the other, only half the thickness.

### SCANLAN'S HOLDER FOR FILM LANTERN SLIDES AND NEGATIVES.

We have in this invention an extremely useful little accessory for all film workers. It consists of two thin cover glasses of any desired size— $3\frac{1}{4}$  by  $3\frac{1}{4}$ , quarter-plate, 5 by 4, or half-plate, or larger—in metal frames, held together by a little catch at the top. The film is slipped between the glasses, the mask for lantern work being fastened to the gelatine of the film; the holder is then closed and the whole inserted in the lantern. By the aid of two such holders any number of film lantern slides can be shown in one evening with an enormous saving of weight. From actual trial we can state that there is no difference in brilliancy between glass and film lantern slides, and the trouble of binding slides is done away with, and there is no condensation of moisture. Another form is made for larger sizes for holding film negatives whilst enlarging or reducing. In this form the film is inserted gelatine or emulsion side in contact with the fixed glass in the holder; the cover glass is then inserted in its place at the back of the film, thus holding the latter tight in its position. The opening at bottom of frame facilitates removal of the film negative with the thumb of the left hand. When not in use, an elastic band keeps the cover glass in position. This holder can also be used without the cover glass for transmitting daylight, or with artificial light, where the heat is not too great—a thinner form for the purpose is made, the film in this case is inserted with the emulsion side outward or exposed. Mr. J. Desiré England, of 21 to 24, Charles Street, Notting Hill, W., supplies films coated with lantern emulsion, and the film holders; and the latter may also be obtained from all dealers.

## Catalogues.

J. H. STEWARD, 406, 457, Strand, W.C., and 54, Cornhill, E.C.

A very complete, exhaustive catalogue of lanterns, accessories and slides, comprising within its 150 pages a perfect encyclopædia of all lantern requisites.

JOHN J. GRIFFIN AND SONS, LTD., 22, Garrick Street, Covent Garden, W.C.

A well printed and illustrated sixteen-page spring price list, containing novelties in apparatus and materials. Messrs. Griffin inform us that they hope to issue a list for each of the four seasons, and they will gladly forward copies as they are published to any address free of charge.

HUNTER AND CO., 23, Norwood Road, Herne Hill, London, S.E.  
Price 3d.

A useful little book containing 24 pages, descriptions and hints for using the various practical conveniences introduced by this firm, such as the print trimmers, the rockers, lantern-slide clamp, print washers and burnishers, etc.

MAX HARRWITZ'S catalogue of photographic books.

In our notice of this catalogue last week, we omitted to state that the address is 41a, Potsdamerstrasse, Berlin, W. In the catalogue are many books treating of daguerreotype and the old processes, and Herr Harwitz intimates that he is always wanting such old books; possibly some of our readers may have some they wish to dispose of.

The Societe d'Editions Scientifiques, 4, Rue Antoine-Dubois, Paris, are about to issue the following works: "La Photographie de l'Amateur Débutant," by A. Buguet; "Recettes Photographiques," by A. Buguet; and "L'Objectif Photographique, Fabrication et Essai," by G. H. Niewenglowski.

Photography has been utilised as evidence in the question as to the destruction of seals. Sir G. Baden Powell paid a visit to the Behring Sea and took a number of photographs, especially of those spots known as the Breeding Islands. These plates have now been developed, and the prints disclose the presence of seals in hundreds of thousands.



## Photographic Procedure.

By E. J. WALL,

*Author of the "Dictionary of Photography."*

### SECTION V.

#### THE SENSITIVE MEDIUM AND ITS SUPPORT.

(Continued.)

To summarize all the methods which have been suggested for emulsion making would be almost impossible, at least, within reasonable limits. Practically, however, we may consider that there are three methods in general practice, viz.—

- (A) The ammonio-nitrate process.
- (B) The acid-boiling process.
- (C) The cold process.

The ammonio-nitrate process, which may be briefly described as the conversion of the nitrate of silver into the double salt by means of ammonia, and the addition of this to a bromised gelatine solution, and digestion of the emulsion at a moderate temperature for a given period, is simple and easy to carry out, and the one specially suitable for amateur emulsion makers.

The acid-boiling process requires more apparatus than the previous one, and though clean working plates are obtained, the sensitiveness is not quite so great as with ammonia.

The cold process is simple and easy, requires no heating, but it is far more difficult to obtain regular results.

(A) *The Ammonio-nitrate Process.*—Eder was the first to suggest this process, and the following is his latest formula. Two solutions are required.

|                                            |        |     |     |          |
|--------------------------------------------|--------|-----|-----|----------|
| A. Potassium bromide                       | ...    | ... | ... | 24 parts |
| Solution of potassium iodide, 10 per cent. | 3 to 8 | ... | ... | "        |
| Hard gelatine (Winterthur)                 | ...    | ... | 20  | "        |
| Distilled water                            | ...    | ... | 250 | "        |

Allow the gelatine to soak for from 30 to 60 minutes in the water in a closed vessel, then place the vessel in a water bath and allow the gelatine to dissolve, and add the haloid salts. Now place the thermometer in the gelatine solution, and make the same register 40 deg. C (= 104 deg. F.) Should the emulsion be too cool, raise the temperature of the water bath; if too hot, place the vessel in cold water for a little time till the emulsion reaches the desired temperature.

|                   |     |     |     |           |
|-------------------|-----|-----|-----|-----------|
| B. Silver nitrate | ... | ... | ... | 30 parts. |
| Distilled water   | ... | ... | ... | 250 "     |

When dissolved, add cautiously liq. ammonia, .880, till the brown precipitate first formed is redissolved. So far these operations may be performed in daylight, but it is now necessary to enter the dark-room and the silver solution should be added to the bromised gelatine in small quantities at a time, vigorously shaking between each addition. The total time of mixing must not be long, as otherwise the temperature sinks too low.

Eder states that the silver solution should be used at the ordinary temperature and not heated, but I have obtained equally good results by using hot water for dissolving the silver and thus using the solution warm.

As soon as the emulsion is mixed it should be placed in the water bath, the temperature of which should be 45 deg. C (= 113 deg. F.). Eder now recommends wrapping the vessel in blankets, flannels, etc., to retain as far as possible an even temperature. By using a very faint spirit flame or small gas flame, however, it is quite possible to keep the temperature the whole time at 45 deg. or just above.

It will be noted in the above formula that the quantity of iodide solution is not definite, viz., 3 to 8 parts. According to Eder, increase of the iodide up to 8 parts gives rather

more sensitive emulsions which are less liable to halation in landscape work. Many operators prefer to use, for portraiture, an emulsion which contains little or no iodide, and, therefore, the amateur plate maker can take his choice.

The duration of the digestion of the emulsion in the water bath has the most important influence on the final sensitiveness of the emulsion. When the above emulsion is digested for about fifteen minutes, a slow landscape emulsion registering about 15 deg. W. and working with great clearness and vigour will be obtained; with 30 minutes' digestion, the sensitiveness will be about 17 to 19 deg. W.; with 45 minutes' digestion about 22 to 24 deg. W. During the digestion the flask must be shaken two or three times so as to prevent any undue separation of the sensitive silver salts.

When commencing to make the emulsion, take of—Hard gelatine, 15 to 20 parts. Allow this to swell in distilled water, and as soon as the emulsion has been digested, pour off the water from the gelatine, allowing it to drain slightly and carefully let it melt in the water bath, which it should readily do, as in the course of an hour or so which has passed in the above operations it will have absorbed enough water to melt. This melted gelatine should then be added to the emulsion, and the whole well shaken, and then the froth allowed to subside a little, and the emulsion should be then poured out into a flat glass or porcelain dish to set. The emulsion should be about three-quarters of an inch thick in the dish, and should be placed in absolute darkness to set, which takes as a rule about five to eight hours, according to the temperature. In the height of summer a little ice placed in the same box as the emulsion will be of assistance; in cold weather this is not necessary.

The above process is suitable for plates of medium sensitiveness, and it is just as well to state here that very rapid plates are extremely difficult to make, and fog and all such incidental and minor troubles, such as frilling, blisters, spots, etc., are more likely to make their appearance when trying to make rapid plates. Whoever has a hankering after emulsion making must be prepared to meet all sorts of curious experiences, and after some considerable experience I venture to state that although one may find a formula from which, according to the author of the same, whole plates may be made at sixpence per dozen, plus the cost of the glass—and such a formula has actually been given—the cost to the writer of three dozen plates thus prepared was nearly as much as the most expensive commercial makes, and gave inferior negatives. Emulsion making by an amateur means a serious expenditure of money and time before he is in a position to turn out a decent plate, but to those who like to buy their experience dearly the game is worth the candle, and the amateur emulsion maker, if he works intelligently and finds out as he should do the cause and cure of every ill that he meets with, will have learnt something that the use of commercial plates can never give him, and the experience thus gained will be of great value by making him believe that many a fault laid to the door of the manufacturer who turns his plates out by the thousands is actually due to the operator.

The simplest formula which the writer has tried, and the one in which success is more likely to attend his efforts, is the following of Eder's, which gives a very good, clean working plate of about 15 deg. W.\*:—

|                                         |     |     |     |           |
|-----------------------------------------|-----|-----|-----|-----------|
| A. Ammonium bromide                     | ... | ... | ... | 20 parts. |
| Solution potassium iodide, 10 per cent. | ... | 3   | ... | "         |
| Hard gelatine                           | ... | ... | 45  | "         |
| Distilled water                         | ... | ... | 300 | "         |

\* Unfortunately, we are almost compelled at present to use Warnerke's sensitometer, but it is an extremely unreliable method of determining the sensitiveness, and one utterly useless for practical work, as we may perhaps see in our discussion on this point,



Allow the gelatine to soak in the water for one hour; dissolve by the aid of a gentle heat, add the salts.

|                       |     |     |     |           |
|-----------------------|-----|-----|-----|-----------|
| B. Silver nitrate ... | ... | ... | ... | 30 parts. |
| Distilled water...    | ... | ... | ... | 300 "     |

Dissolve the silver, and convert into the ammonio-nitrate by the addition of ammonia as previously directed. Heat solution A. to 35 deg. C. (= 94 deg.), and add solution B.; digest for thirty minutes, and pour out to set. By digesting for ten minutes only, a very fine grain emulsion is obtained which gives good lantern slides. The proportion of iodide solution may be increased from three to eight parts with advantage when the plates are intended for landscape work, but in this as in every formula where the iodide is increased, the bromide must be correspondingly reduced, which may easily be done by referring to the tables given above.

### THE EMPLOYMENT OF PHOTOGRAPHY IN RECONNAISSANCE.

A LECTURE on the above subject was delivered at the Royal United Service Institution on the 4th inst. by Lieut. F. J. Davies, Grenadier Guards. Lieut.-Gen. Sir Robert Biddulph, G.C.M.G., Director-General of Military Education, occupied the chair. The lecturer said:—Photography in the field has so far received official sanction that I believe it is proposed to attach a photographic equipment to the headquarters of an army in the field. I understand that two equipments have been prepared, one of which will be carried in panniers, on pack animals; the other in boxes, in a general service waggon. Both these equipments are very complete, and include large supplies of chemicals and other requisites. I hope in the course of my remarks to be able to show that photography is a science of which soldiers can make very great use in time of peace, and further, that it is by no means impossible that it may be of service in time of war. I propose first of all to discuss the use of photography in illustrating sketches and reports; I shall then describe briefly how photography has been used, both in France and in the United States, for the production of accurate surveys, and in conclusion I shall mention two other uses to which photography can be put for military purposes, namely the reproduction of maps, and the reduction of despatches with a view to their transmission by means of pigeons, or concealing them on the body or in the clothing of a disguised messenger. I should like first to point out that the word reconnaissance does not, as far as my meaning goes, necessarily involve active service; on the contrary, we must remember that in peace time also a very large number of reconnaissances are executed, which are more deliberate, and consequently more valuable than those which are executed in time of war. It is, I believe, laid down in all instructions for reconnaissance, that sketches should always, if possible, be illustrated by drawings in pencil, or pen and ink, and I think it is generally agreed that, particularly in road sketches, these drawings would be of the greatest value in enabling a person using the map to recognise important objects, such as church towers, buildings, cross roads, etc., as such drawings, if well done, will convey more to the mind than any map can possibly do. Now I have no wish whatever to disparage the art of landscape drawing, but I should like to point out some of the advantages that would accrue if photography were used for illustrating sketches and reports. First of all, a very great number of us can never learn to draw, while I say most distinctly that we can all learn to photograph. I do not mean to say that we can all learn to produce works of art, such as I saw at Chatham the other day, but I do say that we can all learn in a very short time to photograph sufficiently well for the purpose we are discussing. Again, the accuracy of a photograph is very much more certain than the accuracy of a drawing; even those of us who have an artistic talent are very apt to produce pretty pictures which do not always bear much resemblance to the original. Again, the time occupied in the field in taking a photograph can usually be measured by seconds, whereas to sketch a landscape entails a halt of some minutes. Remember also that the plate can be exposed by one man, and developed and printed from by another; the slides containing the plates are always numbered, so that the person who exposes the plate has only to note down the number of the slide he used for each exposure; thus the plates can be sent back to be developed at headquarters, or, while the reconnoiter is writing out his report, another person can develop and print. As we all know, every great Power has established in some form or other an organisation analogous to our Intelligence Department, for the purpose of collecting and compiling information concerning foreign countries, and which is therefore in constant receipt of reports from agents abroad. These reports

are the results of reconnaissances executed in time of peace. I think that consideration will show that in such reconnaissances great use can be made of photography; opportunities will often occur for using larger cameras than can be used when weights have to be kept down, or if only a small camera is used enlargements may afterwards be made; by means of photography it will often be possible to give a far better idea of the nature and appearance of a country than a written report can possibly give. Photographs could be taken of important road junctions, easily recognisable points along a route, such as peculiar rocks, trees, etc., entrances to mountain passes, difficult places, also points where rivers are fordable; a dotted line on the print would show the position of the ford, and the route to be followed in crossing the river. The negatives could be stored, and in the event of operations taking place in the country, copies could very quickly be printed for distribution. Enlargements could be made when advisable. The position and appearance of forts can often be admirably shown by means of photographs; enlargements will often bring out a surprising amount of detail. I cannot, however, recommend photographing forts abroad as a pastime, as it is a practice to which the police abroad have a most rooted objection. The lecturer here described the various apparatus recommended for rapid work.

*Balloon Photography.*—The use of balloons in war affords another opportunity for using photography in reconnaissance. Several attempts have been made from time to time to develop balloon photography, and special cameras have been devised for this purpose. It has been proposed that balloon photography should be used in sieges by besiegers. One plan is to start a small balloon, loaded with a camera, but without an aeronaut, to windward of the fortress, the plates being exposed by means of a clockwork arrangement, or a slow match, the time which would elapse before the balloon will reach the point or points where the exposures are to be made being estimated beforehand. As the gas gradually escapes, the balloon descends on the further side of the fortress within the besiegers' lines.

*Surveying by Photography.*—I will now briefly describe how photography has been used as a means for obtaining the data for the execution of an accurate survey. The method relies upon the application of the principles of plane perspective. If we wish to obtain the view of an object in perspective, we start from two projections as data, viz., the vertical projection and the horizontal projection. In applying the method I am about to describe, we work back from the perspective view, i.e. the photograph, to the two above-mentioned projections. I will now give an outline of the working of the method. A base is chosen, measured, and its magnetic bearing observed, as in ordinary surveying; from each end of the base a series of photographs of the ground to be surveyed are taken; for each exposure the camera must be carefully levelled, and the magnetic bearing of the axis of the lens observed and recorded. By a mechanical arrangement in the camera the horizon line, and a vertical line representing the vertical plane containing the axis of the lens are marked on the negative, and consequently appear on the print; the point where these two lines cross is what is called in perspective the "principal point." The "focal length" of a lens can always be ascertained; this is the equivalent of what in perspective would be described as the distance between the "point of sight" and the "principal point." We now proceed as follows:—On each photograph we draw perpendiculars from the representations of the two hill tops to the horizon line. We then plot the base on the paper in the usual manner, and from each end of the base we draw a line, having the bearing recorded in each instance as the bearing of the axis of the lens, making each of these lines equal in length to the "focal length" of the lens; at the ends of these lines furthest from the base, draw lines at right angles to represent the horizon lines; the ends of the base will be the "points of sight," and the points where the lines from the end of the base meet the horizon lines will be the "principal points." We now measure on the photograph the distance from the "principal point" to the points where the several perpendiculars from the objects fall on the horizon line, and mark off similar distances from the "principal point" on the horizon line on the paper; if we join the end of the base with the points so marked on the horizon lines, we shall be drawing the bearing of the objects from each end of the base, and shall thus be able to fix their relative positions by intersection. In similar manner we can, by the application of this method, ascertain the relative height of objects represented on the photograph. The above description is merely an outline of the way in which the triangulation is carried out.

*Reproducing Maps.*—As regards the copying of maps, I shall not enter into details. I will only point out that if it is necessary to reproduce a few copies of a sketch at short notice these can be easily obtained by photography. The original sketch is photographed, and prints taken off in the usual manner; if, as will often happen, the exposure has to be made at night, magnesium wire will replace the light of the sun.



# Elementary Photography.

By JOHN A. HODGES.

## CHAPTER X.

### DEFECTS, FAILURES, AND THEIR REMEDIES.

A Common Failing—Fog—General Fog—Chemical Fog—Light Fog—Stains—Frilling—Blisters—Spots—Developer Markings—Mottling of the Film—Insufficient Density—Excessive Density—Halation—Insensitive Markings, etc.

If the beginner has carefully perused the foregoing chapters upon development, and followed out the instructions therein, he will, in all probability, not be long in coming to the conclusion that the apparently simple operation of taking a negative is not quite plain sailing. His path at the very outset will be beset with various difficulties, and it is with the view of enabling him to steer clear of some of these, and to remedy those which are unavoidable, that this chapter has been written. Of one thing the beginner may rest assured, and that is that nine out of ten of the difficulties in which he finds himself will be of his own creation, and not due to any inherent faults in the plates, or apparatus, which he may be using. It is a common fault with many amateurs to endeavour to attribute their failures to defects in their plates, but almost invariably it will turn out, upon investigation, that the user, and not the article used, is to blame. Speaking from my own experience, it is only just to members of the trade generally to state that I have always found them willing to investigate any genuine complaint which may be submitted to them.

*Fog.*—This is one of the earliest faults, common to all gelatine plates, which the beginner will meet with, and it is due to a variety of causes. The thick, pea-soup-coloured vapour called "fog," all dwellers in London are only too familiar with, but the would-be photographer will probably want to know to what particular condition of things the term is applied when used in a photographic sense. Now, as there are different kinds of photographic "fog," it will be well to briefly describe the characteristics of each.

*General Fog.*—This shows itself in a general degradation or veiling of the image, causing a lack of transparency in the shadows. A negative so affected, when examined by transmitted light, appears literally to be enveloped in a fog, and the beginner will experience no difficulty in recognising it. The defect may exist in a greater or less degree, and its effect upon the results will be that negatives so affected will take a long time to print, the prints themselves being characterised by a general flatness and want of vigour.

The defect known as *chemical fog* is one very rarely met with at the present time. It is seldom found except in ultra rapid plates, and is due to error in the preparation of the emulsion. As the beginner should not use plates of the extremely rapid character, in which the defect would be likely to appear, chemical fog need not further be discussed here.

*Light fog* is a defect of a totally different nature, and may be caused in a variety of ways. For instance, too long an exposure in the camera, an unsafe light in the dark-room, a defect in the apparatus, or an overdose of ammonia when developing. When the defect is due to excessive over-exposure of the plate there is no cure, as by the time it makes its appearance the mischief is irremediable. When, however, it owes its origin to some defect in the camera, the fact may be ascertained by examining the plate after development. If the margins of the plate, which are covered by the rebate of the dark slide, retain their white appearance during development, it may be safely concluded that the fault is to be found in the apparatus, and not in the

dark-room illumination. If the fault is due to the camera or dark slides, they should be at once returned to the maker to have the defect remedied. Light will often find its way round the lens flange and through the slot in which the Waterhouse diaphragms are placed; sometimes, too, the glue by which the bellows is attached to the camera, cracks and allows light to enter. The safety, or otherwise, of the dark-room illumination may be readily tested by allowing an unexposed plate to lie upon the dark-room table, at the distance from the light at which development is ordinarily carried on, for about six or seven minutes, keeping half of it covered with a book. If, upon development, the uncovered portion darkens, the light will not be safe, and an additional thickness of orange paper or fabric should be employed. The reader should, however, understand that very few illuminants are perfectly safe if the plates are exposed to their influence for a very long time, but as an abundance of light, of a suitable character, is a great convenience to the operator, it is better to use it, taking the precaution to avoid unduly exposing the plate to its action at the outset, either by keeping the developing dish covered with a piece of cardboard, or by commencing development at the back of the room. When the image is fairly out there will be less danger of fogging, and these precautions may be relaxed.

Another kind of fog which may occasionally be met with in some makes of plates is called "green fog." When the negative so affected is examined by reflected light, it will appear quite green, while if looked at by transmitted light it will appear red. The defect is due to the preparation of the plates, and is more often noticed in the case of under-exposed negatives which have been considerably forced with ammonia in development. Its presence, however, will not materially interfere with the printing qualities of the negative.

*Staining of the Film.*—This must not be confounded with any of the varieties of fog previously referred to. If the formulae for development which have been given are used, this defect will not be met with, but when a simple solution of pyrogalllic acid is employed, without sulphite of soda or other preservative, a more or less deep staining of the film results. Such negatives being non-actinic in colour take a long time to print; therefore it is well to remove the stain by placing them, after removal from the fixing bath and washing, in a solution composed of alum, 1 oz.; citric acid,  $\frac{1}{2}$  oz.; sulphate of iron, 2 oz.; water, 10 oz. After a few minutes' immersion the yellow stain will disappear, and the colour of the negative will be changed to a bluish-black.

*Frilling* is a defect which has already been referred to incidentally in the chapter upon "Development," and it consists in a puckering up of the film, generally near the edges of the plates, and a want of adhesion to the glass. It is rarely met with now, except in very hot weather, when the temperature of the solutions and the water is high. At such times the plate should not be handled more than is absolutely necessary, and, whenever possible, the temperature of the solutions be reduced by means of ice. The use of the alum bath directly after development will tend to prevent frilling during the operation of fixing.

*Blisters.*—These are really a modified form of frilling, and are sometimes caused by allowing the negative to remain soaking too long in the washing water. Directly it occurs the plate should be removed, and placed in a tray containing methylated spirit; after it has been allowed to soak for about ten minutes it may be removed, and, without further washing, placed in the rack to dry.

*Spots.*—The formation of these upon the negative are due to various causes, which, in the majority of cases, are preventable. Their appearance, although a minor defect, is



one of a most annoying character, for they generally show themselves in a most conspicuous part of the negative; for instance, in the case of a portrait, upon the nose of the sitter, or, in a landscape, in the middle of the sky. Spots caused by dust show as transparent markings, but if the advice previously given be always followed, namely, to brush the surface of the plate before exposure and development, spots due to this cause will never occur. Round, transparent spots, more regular in outline and larger than the foregoing, are caused by air-bubbles forming on the plate during development. Some plates are more subject to this defect than others. If, during the progress of development, a camel-hair brush be lightly passed to and fro over the plate while it is in the developer, they will be removed before harm is done. It is unnecessary to add that the brush must be kept clean, and for this particular purpose.

*Opaque Spots* are sometimes met with, and are generally due to some defect in the manufacture of the plates. When they occur, the plates showing the defect should be submitted to the manufacturers for examination.

*Developer Markings* are caused by applying the developer to the plate unskilfully, instead of allowing it to pass over the entire surface of the plate in an even wave. They may be also occasioned by not thoroughly mixing the different ingredients forming the developer. The solution should always be thoroughly stirred before applying it to the plate. A general mottling of the plate is also frequently caused by allowing the plate to lie motionless in the developer. When development is protracted the dish should be constantly rocked.

*Insufficient Density* may result from under-development, over-exposure, or the employment of too weak a developer. The first fault is fully dealt with in the chapters upon development, while the chapter upon intensification provides a remedy for the second.

*Excessive Density* sometimes occurs, and is the converse of the defect just referred to. It is caused by continuing development too long, or by employing a developer containing too great a proportion of pyro. Some subjects require much less pyro than others. Assuming the exposures in each case to be correct, a view taken in bright sunshine would require considerably less pyro to develop it than the same view taken in a dull or diffused light. Subjects showing great contrasts, or a large proportion of white, whether it be whitewashed houses, a chalk road, or a lady's dress, all require a less proportion of pyro than that given in the chapter upon development. Probably in such cases 3 gr. or 30 minims of the 10 per cent. solution of pyro to the 2 oz. of developer will be found ample.

*Halation* is a defect which is very often met with in certain makes of plates which are but thinly coated with emulsion. Such plates the reader should avoid. It is usually only seen when strong contrasts of light and shade occur in the negative. It generally makes its appearance when such subjects as the interior of a church with light streaming through a window, or a landscape with heavy masses of foliage, through which bright patches of sky appear, are attempted. It is probably caused in part by reflected light from the back of the plate, but it seems also to be due to a lateral spreading of the light from a portion of the plate which is brilliantly lighted to an adjacent portion which is in shadow. The evil may be mitigated, if not prevented, by backing the plates before exposure. To do this, mix caramel to a paste with water, and apply to the back of the plate with a brush; this, of course, must be done in the dark-room. The plates may then be reared up on end, in a large box, to dry, which they will do in a short time.

*Insensitive Markings* of an irregular shape, sometimes of

an iridescent character, round the margins of plates, are met with after development, in plates which have been kept too long, or which have been exposed to damp or to the fumes of gas. Plates should always be stored in a thoroughly dry place, *not* on the upper shelves of a cupboard, or room, in which gas is burnt. Exposed plates must never be packed in paper which contains printed matter of any kind, as contact with the printing ink will inevitably ruin the negative.

(To be continued.)



**Utttoxeter Amateur Photographic Association**—The annual conversation of this society was held in the Town Hall on Tuesday, March 22nd, and was numerously attended. The photographs and enlargements shown by the members were considered very good, as were also about 200 lantern slides, also their work. By the kindness of the Editor of the AMATEUR PHOTOGRAPHER, the prints, forming the Monthly Competition, Sea and River Scenery, were exhibited and were much admired. Enlargements were also lent by the Eastman Company, the Blackfriars Company, and Messrs. Marion, which added considerably to the success of the evening.

**The Great Earthquake in Japan, 1891.**—The work which we were promised by Professors Milne and Burton on the terrible earthquake of last October is now in the hands of the public. It is a noble volume, printed in luxurious type, on paper of the finest quality, and illustrated by no less than twenty-nine large plates. We doubt whether any volume of such a sumptuous character was ever before compiled and printed within so brief a period of the event it describes. Two months sufficed to collect materials for, illustrate, put into type, and bind a book that might reasonably have been the product of three or four times that interval. Doubtless this remarkable promptness will bring its reward. Public interest in the great earthquake has not yet begun to subside, and everyone will be anxious to have a copy of a volume conveying such a vivid impression of the appalling phenomenon. Nor will there be much difficulty in gratifying that desire, for the book has been issued at the remarkably cheap price of six *yen* to subscribers, and seven and a half *yen* to the general public. How any margin of profit is left by such figures, we find difficulty in conceiving. The twenty-nine photographs, if purchased separately, would not be dear at five *yen*; the binding, which is handsome and solid, must have cost about a *yen*. What then remains for the printing and paper, to say nothing of booksellers' commission or of remuneration to the authors? However, if Professors Milne and Burton can afford to give us such a book at such a price, we have only to be grateful to them. Professor Milne's letterpress occupies ten pages. Into that short space he has managed to compress a great mass of useful information about earthquakes in general and the Ai-Gi catastrophe in particular. It is interesting to note that the great disturbance, which was destructively felt throughout an area of 4,400 square miles, which made itself plainly perceptible over an extent of 92,000 square miles, and which would have shaken an area of about 400,000 square miles had Japan been surrounded by land instead of water, had its origin in "a basin of palaeozoic hills, where there are neither volcanoes nor volcanic rocks." Yet the bed of alluvium filling that basin has frequently been visited by severe shocks. "In 1826, 1827, and 1859 violent disturbances took place there: many ordinary dwellings, storehouses, and even mountains suffered; people and animals were killed; rivers were stopped up and floods occasioned." During recent years the records seem to indicate a gradually increasing frequency of shocks, culminating in the great shake of last October. Thus the numbers of shocks recorded in the district during the six years 1885-90 were 9, 4, 10, 12, 15, and 36 respectively. These were all sufficiently severe to be observed and placed on record by ordinary means. In immediate and alarming proximity to this statement, Professor Milne gives the accurate records taken with seismographs in Tokyo during the same years, the numbers being 51, 55, 80, 101, 115, and 93. Happily, the capital seems to have entered the downward grade without experiencing any stupendous calamity like that which capped the growing frequency of the Ai-Gi disturbances. With regard to the plates in this handsome volume, it is perhaps sufficient to say that they are photographs taken for the most part by Professor Burton, and reproduced by Mr. Ogawa. Their execution at such hands is necessarily excellent, and we may add that the scenes chosen convey a vivid idea of the great calamity and all its concomitant features. The authors declare that the photographs are "really permanent, in the sense that they will not fade in any length of time." Accompanying each picture is a short description which conveys all the information required for a full understanding of the scene.—*Japan Daily Mail* (Jan. 18th).



## The Lantern, and How to Use it.

By C. GOODWIN NORTON.

### CHAPTER IX.

#### BIUNIAL AND TRIPLE LANTERNS.

(Continued from p. 234.)

All biunial and triple lanterns are now fitted with what is known as a rolling curtain effect, which gives the appearance of one picture being rolled up or down in front of the other. This is managed by passing a thin metal plate or diaphragm between the condenser and the slide. In this plate there is an opening which allows the whole of the rays from the top lantern to pass through it, while the light from the middle lantern of a triple, or bottom one of a biunial, is quite cut off. When this diaphragm goes upwards, it covers the picture from the top lantern, at the same time uncovering the picture from the bottom one.

In order that this may be neatly done, it is necessary that the distance between the bottom end of the diaphragm and the aperture in it should be exactly the same as the space between the two lanterns. If greater, a black line will show; if less, there will be a white one; but as the two lanterns have to be inclined towards each other at varying angles to suit different distances, this space constantly varies, and some arrangement is necessary to regulate the length of the diaphragm. In some cases this is done by screwing on a supplementary plate with slots in it, allowing an adjustment of about half an inch, which is generally sufficient. It must be noticed that as one of the lanterns is always wholly or partly covered by this diaphragm, it must be entirely removed when dissolving views are shown.

To avoid this, Mr. Steward has introduced his supplementary rolling curtain shutter, which permits all the lanterns to be kept on without removing it; and its length can be readily adjusted.

Mr. Hughes has successfully applied the rolling curtain to oil lanterns placed side by side.

In the best lanterns these rolling curtains move by means of a rack and pinion, thus ensuring smoothness and regularity in working.

A very nice effect is produced upon a plain photograph by passing a long tinted slide between the light and the condenser. For this purpose openings are cut in the body of the lantern and closed by brass shutters, which can be shut up when required or left a little open for the purpose of ventilation.

This long slide can be painted with clouds and graduated from daylight to sunset and moonlight. It does not blur the picture, as coloured glasses are apt to do when placed in front of the objective. The drawback to it is the trouble of using and the danger of getting it broken.

**REGISTRATION OF EFFECTS.**—There are few exhibitors or lecturers who can depend upon their own oratorical power and their slides without effects to keep an audience interested for one and a half or two hours; certainly many have tried the experiment, but only for a few times. With plenty of effects and a careful operator at the lantern, an indifferent lecturer will sometimes be forgiven, but when the pictures are simply shown one after another without variation, and the lecturer not quite up to the style of Mr. Malden, he may think himself fortunate if the audience do nothing more objectionable than go to sleep. It must be remembered that many of the audience have probably been at work all day and require something interesting to see as well as to hear, hence the necessity for effects to keep their attention from flagging.

In order that all pictures may fall in their right places on the screen, it is necessary, as regards the Lantern, (1)

that the objectives should be of the same focus, (2) that the centre of each slide should be in the centre of the rays of light, (3) that the centres of the rays from each lantern should fall in the same spot on the screen, (4) lastly, that the vertical and horizontal lines in one picture should be parallel to those in the other. Some firms make a speciality of their system of registration, and keep their own method of doing so a secret; others seem to have no system at all, and prefer to let their customers manage the matter as well as they can. Some makers say that the only method of securing exactness is to have movable runners which can be adjusted to any height, others affirm that this is all wrong, and that the lantern itself must be corrected before it leaves the maker, or endless trouble will ensue. There is a great deal to be said on both sides. Lanternists who show many effects know that the slides must be fixed in frames, and that the frames must all be of one size, in which case it is unnecessary to have a movable stage in the lantern; but, on the other hand, the hinges or other parts of the fronts may give a little unless made very strong, and consequently heavy—one end of the runner may then become a little higher or lower than it was when first adjusted, and unless this can be remedied, it will be fatal to correct registration.

Generally speaking,  $\frac{1}{8}$  in. is the utmost that the end runner will be required to be raised or depressed to get it parallel to the others, and some arrangement must be made to effect this. A very simple way is to have the pillars supporting the runners filed away a little to form flat surfaces at the top and bottom; these flat surfaces should not be parallel to each other, but inclined to points some distance each side from the lantern. Now, if the ends of the

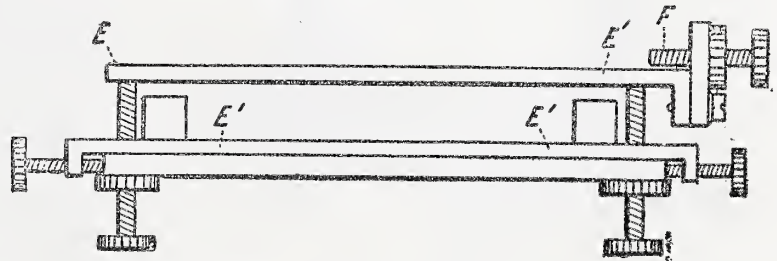


FIG. 29.

runners are carried down  $\frac{1}{4}$  in. outside the pillars, and two small-pointed screws passed through each end, one above and one below the pillar, the runner can be raised by the top screw pressing against it and the inclined plane on the pillar, and then tightened by the lower screws. In some lanterns the pillars are square; this makes it much easier to manage. Another way would be to have the pillars eccentric, in the form of a cam; these when slightly turned would raise or lower the runner at either end.

There are also several elaborate systems for raising or lowering the runner at one or both ends. Mr. Steward's register slide runners (fig. 29) are constructed to ensure the perfect registry of slides. Either end of the runners can be raised or lowered by screws and also those long slides, such as panoramas, with which the usual stop at the end, requires to be turned down, can be adjusted to any point by means of the horizontal screws, stops being put on the long frames to abut against the end of the runner. This adds £6 6s. to the cost of a triple.

Mr. Hughes' new patent Simplex registering apparatus, fig. 30, can be fixed in the stage of any lantern. The stop at the end can be moved by the horizontal screws to place the slide in its proper position; it can also be turned down to permit panorama slides to be used. The two screws at the



bottom are for raising or depressing the runner on which the slide rests, and enable the registering crosses to be adjusted with the greatest nicety. They are supplied with carrier and metal masks for cutting all pictures down to a definite size, and cost £1 each.

But with all these methods it must be remembered that a photographic slide with a square mat should only be moved a little from the centre of a 4 in. condenser, or the corners are liable to be cut off, especially as the rolling curtain removes it farther from the condenser and nearer to the smaller end of the cone of light; therefore the adjustment should be made as much as possible by means of the hinged plates, so that all slides may fall in the centre of the condenser.

To get the discs exactly coincident, it is necessary to have a pair of registering slides; these are of various kinds and prices. Mr. Steward's Standard Registering Crosses (patent) are mathematically true, having horizontal and vertical lines. They cost £2 15s. each. His photographic registering crosses are first photographed on glass, then placed in frames, adjusted by very careful calipering, and cost 3s. 9d. each, which is by no means dear. Mr. Hughes' registering

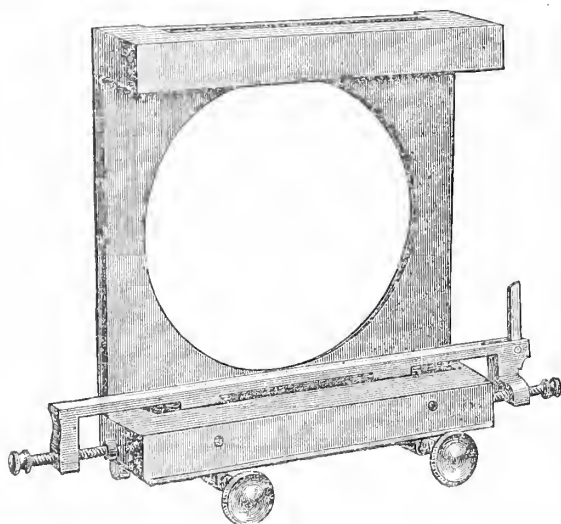


FIG. 30.

crosses are made by a process which he keeps secret; 15s. each.

Norton's registering templates are not photographed, but made by a mechanical process which ensures their being absolutely identical. They can be used to test whether two or more lenses are of the same focus, also for flatness of field, and to ascertain whether the lens is rectilinear. These can be obtained at 2s. each. To test for flatness of field, procure a piece of the finest muslin and fix it between two cover glasses the same as a lantern slide, place it in a frame, and if necessary, wedge it close to one side all round, so that its whole surface shall be square to the centre of the rays of light when in its place in the lantern. Focus this on the screen, which should be parallel to it, and notice whether the projection is sharp all over, or if there is any variation between the centre and the edges. This will be found a much better test than a photographic slide, because the lens that was used to take the photograph may not have produced a perfectly flat picture. Photographic lenses can be tested in this way for flatness of field if the lens can be applied to the front of the lantern, but it should be noted that while flatness of field with full aperture is practically all that is required of a lantern lens, it is only one of the requirements of a photographic lens. To test for equality of focus, place one of Norton's registering templates

in the stage of each lantern, and focus sharply; now adjust the two discs until the two squares formed by the lines on the slides coincide. It will be at once seen whether the two lenses are the same focus.

The focus of a compound lens, such as a portrait or rapid rectilinear, can be altered a little by increasing or decreasing the distance between back and front combinations. This may or may or may not improve its definition, etc.

To lengthen the focus, unscrew the back combination and insert a leather washer the required thickness; but to shorten the focus, the tube must usually be cut down and rethreaded.

To ascertain whether the lenses are rectilinear, place the eye close to the screen and look along the lines, or try them with a straight edge.

These are most critical tests for lantern lenses, and the lanternist may consider himself very fortunate if his objectives pass them successfully.

Assuming that the lenses are as near perfection as the pocket will allow, the next thing to be done is to ascertain whether the runners in the lantern on which the slide rests are parallel to each other and to the hinge. Place the lantern on a perfectly level table, or stand, at a suitable distance from the screen; put a registering template in the bottom lantern, the front tubes of which should be in a horizontal position; focus sharply, and put a pin in the screen at each end of the centre white line; now raise the whole front, by means of the adjusting screws, as high as it will go, taking care not to disturb the lantern from its level position. This will bring the bottom white line up to the pins, or nearly so, and it can then be seen whether the hinge is parallel to the runner. If not, the runner must be adjusted at one end; when this is done, the middle lantern runner can be adjusted in the same way, and afterwards the top one; then try the middle and bottom ones together, and then the top and middle, and lastly the top and bottom. Afterwards adjust the side stops to make the perpendicular lines coincide. When properly adjusted, the squares projected from each lantern should show as one on the screen. It may be objected that all these adjustments will cause the consumption of a large quantity of gas, which everyone cannot afford. It is not necessary to burn gas during the whole time the adjustments are being made; a wax candle end will, if carefully placed with regard to the condenser, give ample light for the purpose. As it burns away it can be raised by placing a piece of glass under it every five minutes or so. The amateur photographer may possibly have a spoilt negative or two by him which can be used for this purpose. Lime-light may be used to make the final adjustments.

When the lantern has been once carefully adjusted in the above manner, the runners and side stops will only require to be again moved in the smallest degree, or perhaps not at all. A far more difficult matter is to get the slides of each set of effects exactly identical.

(To be continued.)



**West Kent.**—Special meeting on 25th ult., Mr. A. R. Dresser (Vice-President) in the chair. Mr. G. J. Gill was proposed for membership. Mr. Reffell then gave a most interesting and instructive demonstration with an electric light (arc lamp) applied to the lantern. Slides by Messrs. Fry, Grant, Dresser, Reffell, Taylor, and Court were shown. Several photographs were also taken by same light, and good results obtained.

**South Hornsey.**—Ordinary meeting held on 23rd ult., Mr. P. A. Legge in the chair. The chairman briefly announced the arrangements for the exhibition on the 7th inst. at Wortley Hall. Mr. M. H. Hudson then gave a demonstration, "Lantern-slide Making," making two or three slides showing the different tones obtainable with the same developer. The Hon. Secretary then passed round some bromide prints, taken from Kodak negatives, kindly sent by the Eastman Company.



## Tips Economical.

By H. J. L. J. MASSE.

MANY of those who have taken up the attractive hobby of photography have, no doubt, been astonished when they have sat down to calculate the cost of this form of their amusement. The gist of the old proverb, "Take care of the pence," etc., is never so clearly seen as in a detailed list (with the cost) of the many small articles that have to be bought if the photographer have neither time nor ability to make some of his own small accessories, nor yet the ingenuity to adapt to his own use things originally constructed for far different purposes.

Firstly, as to the storing of the requisite chemicals. It, no doubt, is pleasing to the eye to have a nice row of bottles, wide-mouthed and accurately stoppered, to contain the various chemicals; but these nice bottles, though cheap enough, mount up in price where many are required. Many householders have noted the accumulation of bottles like those in which Mellins' food for infants is sold. They (the bottles) are most useful in many ways. The stopper, if carefully removed from the cork-lined neck of the bottle by the use of hot water, may be used again and again till the bottle is empty, and then it comes in handy, after washing, as a bottle for chemicals such as common salt, borax, alum, soda, oxalate of potash, and the like. The 1 lb. jars in which extract of meat is sold are very useful too, and in lieu of labels, which readily drop off in a very hot dark-room, may have the name of their contents painted on with Brunswick or Berlin black. For any deliquescent salt, such as carbonate of potash, the potted meat jars with the screw tops are useful; so too are those with tops or stoppers of earthenware with a revolving metal attachment for clamping the top to the lip of the jar. "Hypo" may be stored in the Chinese ginger or chow-chow jars, or better still in the large 7 lb. jars with air-tight stoppers in which pickles are sometimes sold. If the ginger jars are used, the wooden bung must be covered with a piece of macintosh or some waterproof material to exclude the air. For the storing of hypo anything is preferable to the tin canisters in which most people store it. If the hypo once gets damp, the tinned surface of the inside of the canister perishes, and the hypo becomes stained with iron. Another useful bottle for storing chemicals is the pickle-bottle with the patent lever top. This is practically an air-tight means of fastening a bottle, and is useful for chemicals which deliquesce, and for solutions which would oxidise on exposure, and so deteriorate.

Printing frames are articles which can be very easily made by anyone skilled in the use of tools. They may be made like an ordinary picture-frame, and a back made of two thicknesses of strawboard glued together, cut to size, and a hinge of broad tape glued on the back. This back may either be hinged exactly in the middle or at a third of its length—in this way it is possible to inspect more than half the print during the process of printing. The springs can either be made or bought, and they can be fastened to the frame and also held in position by round-headed screws, or by wire nails, bent at right angles, tapped and screwed in the frame. A printing-frame may be extemporised very readily by using for the back a discarded negative of the same size as the one from which a print is required; this back can be cut in two with a glass-cutter or diamond, and a hinge can be made of gummed paper. This back can be held tightly and evenly to the negative to be printed from by two or three Demon clips. Care must, however, be taken to place several thicknesses of paper or a piece of American cloth between the printing paper and the glass back, so as to prevent any light getting to the wrong side of the printing paper.

Most workers in photography have felt the disadvantage of having scale-pans of brass, a metal which so soon discolours, or of glass which is so difficult to keep quite clean; and more than this, the inconvenience of having such small scale-pans fitted to their scales. The celluloid balls now used so much by children are when broken or separated into two hemispheres very useful adjuncts to these small scales. Place half a small celluloid ball in each scale pan, pare them to make the scale balance evenly, and it is possible to weigh up to 4 or 5 oz. in a scale previously incapable of taking more than a few drachms. The celluloid weighs next to nothing, and so cannot strain the scales at all, and the half balls make, when compressed by the fingers, most handy scoops for taking up chemicals, or funnels for pouring chemicals into a bottle. The celluloid is cleaned without diffi-

culty, and serves admirably for weighing out fluids when required.

Now a word as to focussing-cloths. The materials recommended are many, but I think if anyone would try Italian cloth, he or she would be as delighted with it, as I was, and am still. It must be used double, and if made large enough can be used as a changing-bag. Those who have marked their plates or films with a scrap of gummed paper can thus work in the dark by touch, not by sight.

In conclusion, a hint as to measuring glasses. An ordinary medicine bottle if cut off at the shoulders makes a useful glass, and the bottles graduated with teaspoonfuls are also similarly useful. After cutting down the bottle the edges must be rubbed down with emery. Glass jugs can easily be graduated to ounces by careful measurement and the application of white paint or enamel.

## Pressure Gauges for High-Pressure Gases.\*

By F. BUDENBERG.

THE frequent recurrence of late of more or less violent explosions connected with the use of pressure gauges on oxygen cylinders appears to have created much uneasiness, and even alarm, in the minds of all interested in the application of these cylinders for lantern work. In consequence, pressure gauges in general have been emphatically condemned; and even upon the best authorities, lanternists are strongly advised to discontinue their use entirely. The great utility of these gauges in enabling the manipulator to readily ascertain the exact quantity of gas contained in a cylinder is, however, universally acknowledged; and, before urging the discontinuance of their use, careful inquiries should surely be made to ascertain what has been the precise cause of these accidents, and whether means cannot be found or devised for preventing them in the future. In claiming this amount of consideration on behalf of these instruments, I would plead that, so far as my experience goes, these accidents invariably admit of a simple explanation, and are the result of either gross carelessness or ignorance on the part of the maker or operator.

All that is required is that lanternists should assure themselves that the gauges they use are properly made and fitted for the particular purpose upon the principles which are now fortunately well understood; and, if this were universally done, I have little hesitation in prophesying that nothing more will be heard of these explosions—at any rate, in connection with pressure gauges. It is the special object of this paper to draw your attention to the necessary safeguards; but, before entering upon a consideration of these explosions themselves, it will be necessary to give you a cursory description of the construction and mode of manufacture of pressure gauges as practised by my firm.

A pressure gauge as used for this purpose consists essentially of a steel tube of elliptical section bent to the form of a semi-circle, one end being screwed to a boss through which the gas under pressure is admitted to the tube, whilst the other end is free to move, being simply closed by means of a brass cap screwed on to the tube. When pressure is admitted to such a tube, the section has a tendency to change from the elliptical to the circular form, and, in consequence of this action, the curvature of the tube is reduced. The tube, in other words, shows a tendency to straighten, causing the free end of the tube to move away from the boss, and the degree of this movement indicates the amount of pressure which has been brought to bear on the tube. The movement is magnified by the aid of a toothed quadrant which is in gear with a pinion carrying a pointer, and the latter indicates the pressure on a graduated scale, the whole being mounted in the manner shown in the illustration. In order to ensure accuracy of indication, it is of primary importance that all the parts of a gauge be fitted up in the nicest possible manner, so as to obtain perfect freedom of movement in the various joints and bearings without the slightest play in the direction of movement. Any such play or back-lash would be magnified by the multiplying gear, and render considerable variations on the scale of the dial. A slight

\* A communication to the Lantern Society.



back-lash between the teeth of the quadrant and pinion is, of course, unavoidable, and in all well-made gauges this is taken up by means of a fine spiral hair spring.

The most important part of the gauge is the tube, and the reliability of a gauge depends chiefly upon the choice of the material for the tube, and the care bestowed upon its manufacture and testing. For indicating ordinary boiler pressures of, say, about one hundred pounds per square inch, tubes made of a copper alloy are ordinarily employed; but for the high pressures which have now become customary in the storage of these gases, gauges with steel tubes are nearly always used. Some gauges are fitted with ordinary drawn steel tubes, but these are vastly inferior to tubes turned out of solid steel which has been specially selected and is suitable for this purpose. The tubes in all gauges manufactured by my firm are bored and turned out of a special brand of Sheffield octagonal or pressed steel, the tubes being made in a very large variety of shapes and strength according to the amount of pressure they are required to register, and the conditions under which they are intended to be worked.

For the particular purpose with which we are now more immediately concerned, tubes are used which will safely stand a pressure of 360 atmospheres without taking the slightest "set," the diameter of the tubes before being flattened being about one half of an inch, with a wall thickness of nearly one-sixteenth of an inch. After the tubes have been turned, they are polished inside and out, to remove every trace of tool marks, and they are then microscopically examined by light reflected from a mirror, any tube showing marks or scratches being rejected as unfit for use. The tubes are then carefully flattened and bent at a moderate heat, and to perform these operations with entire satisfaction necessitates the greatest experience and skill. Finally, the tubes are hardened and tempered, and a great deal also depends upon the manner in which these operations are performed. The tubes are then again carefully examined, and, if proved satisfactory, they are subjected to a series of tests. For this purpose each tube is temporarily attached to a special testing apparatus, the free end being connected with a mechanism which is identical in all its main features with the works of the gauge which the tube is intended to fit. The tube is then submitted to a pressure of 360 atmospheres for one hour, or longer if possible, and careful note is taken, when the pressure is released, whether the pointer, of the facsimile gauge returns to zero. If not, the tube is rejected and destroyed, a strict rule being made never to temper a tube twice, in case the first attempt should not have proved a failure. The bursting strength of a tube successfully completed in this manner will be between seven and eight tons per square inch, or exceeding 1,000 atmospheres; but these are by no means the strongest tubes that can be manufactured, and we have produced gauges which indicate regularly and successfully pressures up to thirty tons per square inch, or 4,500 atmospheres, being nearly forty times the highest pressure employed in oxygen cylinders. The tube is next attached to the carrier boss, and the cap is screwed on to the free end of the tube, the metallic joint at both ends of the tube being made by means of a sharp-edged projection, which is turned on each end of the tube, and beds itself into the material of the boss and cap. The multiplying mechanism is next fitted up, the several parts being made beforehand in large quantities and by special machinery. The gauge is then secured in its case, whereupon it is again attached to a test pump. The multiplying mechanism is now adjusted, so as to give the required range of movement to the pointer, and, the dial having been temporarily inserted, the scale is marked out point for point for comparison with two large standard test gauges, which are periodically tested upon a dead-weight frictionless testing machine specially constructed for this purpose. Each dial is written by hand, and is subsequently inserted into its gauge and secured by means of three screws. The pointer is then fastened to the pinion spindle, the gauge is completed, and submitted to another final test upon the hydraulic test pump. A gauge made in this manner will, if fairly used, permanently indicate on the dial any pressure with extreme accuracy, and may be kept under constant pressure without liability to deterioration.

There are, however, a large number of gauges in use which do not comply with these essential requirements, some specimens placed upon the market being, indeed, very inferior in construction and workmanship; and as there is little to distinguish these gauges in external appearance from efficient instruments,

it may be useful to indicate a few simple tests by which the grossest faults, at any rate, can be discovered by any one. For this purpose it is only necessary to remove the brass rim and glass, and to fix the gauge upon a gas cylinder charged to the full pressure of 120 atmospheres. Before opening the valve, lift the pointer over the pin against which it rests, when there is no pressure on the gauge. By means of a pencil, mark upon the dial the exact spot where the pointer settles; then lift the pointer back, and open the valve; after leaving the gauge under pressure for, say, a quarter of an hour, or, better still, half an hour, close the valve, release the pressure, and, after again lifting the pointer over the rest pin, observe whether the pointer comes back to the exact position which it occupied before. If there is a perceptible variation the tube has given way, and this forms conclusive evidence that the gauge cannot be relied upon. A more rigorous test consists in making the same experiment under the maximum pressure to which the gauge is marked, say, to 250 atmospheres, or even to a pressure exceeding this, and any well-made gauge will easily stand the test.

The above tests, which any lanternist may perform, will suffice to bring to light the worst defects. When the gauge is under pressure the painter should be gently moved both ways, and it should be observed whether it invariably returns to precisely the same indication. Any variation would be the result of back-lash or sticking, and points to inferior workmanship.

Having, then, become acquainted with the construction and working of these gauges, we will next consider the dangers connected with the use of these instruments for high-pressure oxygen and hydrogen, or coal-gas cylinders, and at the outset we must distinguish clearly between explosions which are the result of bursting of the tube, and chemical explosions, which are due to the firing of inflammable matter in the tube or connexions of the gauge. By far the largest number of accidents which have hitherto occurred are the result of *chemical* action; but some of them must undoubtedly be attributed to a simple bursting of the tube, due either to bad construction or to a defect in the material of the tube. In some cases the tubes have been turned out round, or have been insufficiently flattened, and, in order to obtain sufficient sensitiveness, makers have reduced the thickness of the tube to such an extent, that it has sooner or later burst from sheer weakness. In such instances, the sudden rush of gas under the enormous pressure into the *gauge* body instantly puts the case under a pressure which it is not calculated to stand, and a violent explosion is the result, in which the *case* is generally shattered whilst the interior of the gauge may be left fairly intact. An accident of this nature is not likely to occur with a well-made gauge; but as even the best tubes may in the course of years develop defects which could by no possibility have been discovered in manufacture, it is, nevertheless, advisable to provide every gauge with a protection against accidents of this nature. For this purpose the best safeguard consists in fitting the gauge case with openings, or other free vent, combined with a check in the inlet to the gauge. The latter will prevent the sudden admission of pressure to the gauge, and any pressure which might otherwise slowly accumulate in the gauge case will be relieved by the vents in the case.

In all gauges manufactured by my firm during the last year, or thereabouts, the vent has taken the form of a loose hinged back or valve, which is held closed by means of a light spring. If even a very light pressure is admitted to the case, this valve will be forced open, and the pressure is then instantly relieved. The entire efficiency of this safeguard has been experimentally demonstrated.

The investigation of the second and more important class of accidents which are attributable to chemical explosion is not quite so simple, but the general causes are well understood. They are produced by the ignition of oil or other inflammable matter in the tube, the heat necessary to effect the ignition being the result of the sudden compression of the air or other gas in the gauge tube and connexions. When the valve of a cylinder charged to 120 atmospheres is suddenly opened, the whole of the contents of the connexions to the regulator and gauge are instantly compressed to the 120th part of their former volume into the most distant parts of the internal passages, such as the extreme end of the gauge tube; setting aside the effect which the mixing of the gases will have, the action is similar to what would occur if the contents were compressed by a piston. In this way, sufficient heat is set free to raise the temperature of the compressed body of air or other contents to a considerable degree of temperature



and this will suffice to ignite any highly inflammable matter that may have lodged in the extreme end of the tube or connexion.

This may be easily and safely demonstrated by a simple experiment. A straight tube, say six or seven inches in length—one end of which is closed by means of a cap, into which a piece of tinder or other similarly inflammable matter is secured—is attached to a cylinder containing air compressed to, say, 120 atmospheres. By suddenly opening the valve, sufficient heat will be set free to ignite the tinder. I have even successfully performed this experiment with a tube only four and a half inches long, and with a pressure of barely eighty atmospheres. Mr. Whitefield (Vice-President of the Manchester Photographic Society) has kindly conducted an experiment for me, with the object of determining the temperature of ignition of the tinder used in this experiment; and he finds that this is about 410 deg. Fahr., which, I think, is about the same as the firing temperature of an explosive mixture of hydrogen and oxygen. If such ignition can be produced in the presence of air only, how much more likely may this not be in an atmosphere of oxygen! Let us now suppose that traces of oil have been left in the gauge by the maker, or that oil which has been used for lubricating the valve of the cylinder, or other purpose, has been blown into the gauge tube during an admission of gas. If such a gauge is applied to an oxygen cylinder immediately after use on a hydrogen cylinder, and the valve is opened suddenly, the heat set free will be sufficient to fire the mixture of oxygen and hydrogen in the end of the tube, and this, in turn, will ignite the oil in the tube, with the result that a violent explosion will occur, owing to the rapidity and intensity with which the oil is consumed in the presence of oxygen; but, even without having hydrogen present, the heat evolved by a sudden opening of the valve may be sufficient to ignite directly any oil that has gained access to the tube. Possibly some of the oil might be carried forward by the in-rushing gas in the form of spray; and, in an atmosphere of oxygen, this would probably ignite at a comparatively low temperature. The temperature of any oil in the tube may even be materially increased by friction resulting from the in-rushing gas; or the particles of oil, carried forward with great violence, might become heated by friction against the sides of the tube and by the sudden impact with the end of the passage; and all these circumstances would increase the danger of explosion.

Since the danger of the presence of oil in these gauge tubes has come to be realised, we have discontinued the practice of using oil for dividing and testing these gauges, pumps filled with water having been adopted instead; and the greatest care is exercised to prevent any oil from coming into contact with the gauge fittings during manufacture. Special water pumps are now set aside purposely for this work, and the connections are so arranged that it is impossible for any workman to screw the gauges on to an oil pump without providing himself with a special connection for this purpose—all chances of a mistake being thus overcome. The pumps themselves are fed from the main, and, after each test, the contents of the pumps are discharged into a white enamelled trough, in which any traces of oil can easily be detected. Subsequently, the contents of the tube are extracted by means of a vacuum pump, and are examined for oil. Finally, the remnants are blown out by admitting air pressure to the gauge at 100 or 120 atmospheres, and suddenly releasing this pressure. In this manner, everything that human foresight can provide is done to minimise the chances of the tube containing, when completed, even the slightest traces of oil. But, in spite of every care, the entire absence of oil or other inflammable matter cannot be absolutely assured: and even if this were done, there always remains the danger of oil gaining access to the tube accidentally when a gauge is in use. Therefore, whilst continuing to exercise every care to keep away all traces of oil, the ultimate safeguard against accidents of this description must be looked for in another direction, namely, by checking the sudden in-rush of gas to the gauge when opening the valve, so that the pressure in the gauge rises gradually, and the heat evolved has time to be absorbed by the material of the gauge tube. This may be accomplished by opening the valve very gently; but, as this gentleness cannot always be ensured, owing to the frequent stiffness of the valves, carelessness, and want of skill, it is indispensable, in order to secure perfect safety, to fit each gauge with some means for automatically checking the admission; and, whatever check is employed for this purpose, it must not require any particular attention or manipulation. Various devices have been brought out for this

purpose; but, of all that have come within the limit of my experience, the check patented by Mr. W. M. Jackson, of the Manchester Oxygen Company, is by far the simplest and best. This consists in screwing a plug, through the centre of which a fine hole has been drilled, into the foot of the connecting shank of the gauge. Upon this plug are placed a number of alternate layers of copper wire gauze and felt cloth. Another screwed plug, similarly drilled with a file hole, is then added, and the alternate layers of gauze and felt are compressed between the plugs. This packing retards the pressure of the gas, even when suddenly turned on; but it does not prevent the ultimate admission of full pressure to the gauge.

I am of opinion that absolute immunity from danger of chemical explosions in gauges can be ensured by the proper use of this check, and it is not too much to say that no gauge used for this purpose should be without it or some equivalent device which has proved satisfactory. If a pressure gauge is of sound construction and well made, and fitted with the adjuncts which I have described, and these are kept in proper working order, it may, I think, be accepted that such an instrument is absolutely safe, and there need be no fear of any accident from known causes. The experiment which I have performed before you suggests, however, that even without the use of a pressure gauge an explosion in the connexions is possible, provided the end of the passages in the connexion is sealed and the pressure suddenly admitted. Generally speaking, the regulator valve is full open when the cylinder valve is being opened, and there is, then, little danger of heating in the regulator connexion; but circumstances might arise in which pressure is suddenly admitted with the regulator valve closed, and here the conditions are precisely similar to those which exist in the cases of gauge chemical explosions. This might, for instance, occur if the valve is opened twice in succession, the first opening having been sufficient to set the regulator to work.

If the pressure is then released and re-admitted suddenly, an ignition might occur in the regulator connexion. It appears to me that the same thing might happen in using a cylinder valve which is not quite true, and which is worn to an oval shape in the seating. If such a valve is opened, a puff of oxygen sufficient to fill the regulator might be passed, followed by a temporary closing, whereupon a sudden opening might produce in the regulator connexion the precise conditions for an explosion. These considerations suggest the theory that some of the explosions which have been attributed to pressure gauges have probably originated in the connexion of the regulator itself. The danger under consideration can be minimised by making the connexion to the regulator as short as possible; and, generally speaking, long passages of any kind between the cylinder valve and the regulator or gauge should be rigorously avoided, as constituting a decided source of danger; and, wherever it is necessary to have a long passage, the end of which is or may become sealed, a check should be provided.

If lanternist would only devote their attention to these points, and assure themselves that the principles here laid down are carefully carried out, we shall have no more explosions; and my labour in preparing this paper will have been amply rewarded if it should have the effect of arousing the members of this society, and through their medium other lanternists, to the importance of carefully studying this subject.



**Birmingham.**—On the 23rd ult. the last lantern evening was held, when a very fine selection of slides was passed through the lantern by Mr. E. H. Jaques, before a numerous and appreciative audience. The first slides shown were a series loaned from the Camera Club, London, and comprised some splendid animal studies by Mr. Gambier Bolton, and various slides by Major Knott, and Messrs. Stroh, Conway, Mackrel, Green, etc., and Mr. Dresser's climbing dog studies, the whole of the work doing great credit to the Camera Club for placing such instructive and interesting sets at the service of provincial clubs. The concluding portion of the evening was devoted to the Prize Slides of the AMATEUR PHOTOGRAPHER, numbering some 160. Many of these are of rare beauty, as will be known when such names as Mrs. Francis Clarke, Messrs. Austin, Dresser, Grimshaw, Macdonald, etc., are mentioned. The entertainment ended with a lantern effect by Mr. Jaques, representing a snowstorm in Norway. Mr. W. J. Harrison, F.G.S., who presided, announced that nearly 500 photographs had been sent in for the Society's annual competition and exhibition, which is to be held on April 5th, 6th, and 7th.



## Uranium Toning.

By S. HERBERT FRY.

OF all the lectures and demonstrations that I have had the pleasure of giving during the last few months none have been more largely attended than those upon uranium toning. I have been asked whether I intend publishing the drift of my observations for the benefit of those at a distance who could not attend the demonstrations themselves. The following short *resumé* is the result.

The practice of toning bromide prints with uranium is an extremely simple and interesting one. There are no inherent difficulties whatever, and yet, notwithstanding this, many workers meet with irregularities and troubles which require careful consideration to set right. In my own hands, too, I have met with failures, such as irregularities in tone and in colour, a tendency to deposit a green tint all over a picture, pink stains upon the paper, or a persistence of the yellow stain due to the uranium intensifier itself. All these difficulties would be avoided if absolutely perfect conditions of work obtained. A summary of these notes might, therefore, be given in a few words, viz.: Produce a perfect bromide print, and intensification by uranium is an absolutely simple process. To begin with, then, the bromide print must be technically excellent as far as the chemistry of photography is concerned. The first point that I am inclined to urge is that every print which it is intended to tone should not only be carefully fixed in an ordinary 20 per cent. fixing bath, but should afterwards be passed for a few minutes through a very strong solution of hypo-sulphite of soda. By this means the bromide of silver is not only perfectly converted into hypo-sulphite, but the second and stronger bath ensures that all the silver salt shall be removed from the film by the solution. The next point is obvious. The prints must be carefully and efficiently washed. The use of a second fixing bath very materially simplifies this process, for, if it is not heterodox to say so, I do not think that there is much difficulty in removing the fixing solution from a print, be it albumen or gelatine, granted that the fixing operation has been properly performed. The very best way to wash out the hyposulphite of soda is to lay the print film downwards upon a piece of glass, or upon the back of a porcelain tray, or if nothing else is available, an ordinary enamelled tea-tray answers the purpose admirably, and to press out all the free liquid which is held in the fibre of the paper by passing over it an india-rubber squeegee. By this means the water and its contained chemicals are eliminated very thoroughly, and if the print be passed through half a dozen baths of clean water, and the squeegee process be effected between each change, washing is very promptly and efficiently done. If an india-rubber squeegee be not at hand a good substitute is to absorb the moisture from the back of the print, laid down upon an impervious substance as before indicated, with the aid of a piece or two of blotting paper. Although not quite so efficient as the former process, still it is a very much more rapid method of securing the desired result than by simply allowing the print to soak in repeated changes of water. I do not think that it is absolutely necessary, but it is certainly an error upon the right side, to follow up the washing of the print by passing it through a solution of peroxide of hydrogen. A convenient strength is one part of a twelve volume solution of the peroxide to twenty parts of cold water. The prints already supposed to be thoroughly washed, should be placed in this solution for ten minutes, and then again slightly washed. In my hands, a trace of this hypo-eliminator does not appreciably affect the toning. I have referred to this last process as being not absolutely necessary, but it is in my opinion imperative that the prints should be allowed to dry before being toned. It is difficult to say why this should be, but in all processes involving intensification, and notably when a negative is to be intensified with mercury, the results are much more certain and reliable if the gelatine film be allowed to dry before intensification. It must be borne in mind that uranium toning is after all a process of intensification. The next point then that occurs is, to what depth should the prints be developed to secure the very best results when toned?

This is a difficult matter to make clear in writing, but the position is best described by saying that the prints should be fully exposed, so as to secure all the detail that is in the picture without forcing development, because—and this is important—the latter must not be carried quite so far as is the usual custom.

The density of the deep shadows will be apparently increased by the after process of toning, but, on the contrary, the intensification will not produce detail where none already exists. It is therefore necessary to obtain all the detail that there is in the negative, whilst the deeper shadows should be a little short of the final depth desired. Of the developer itself and of the colour of the image which is best suited to produce fine effects, I may write briefly.

It seems to be a matter of indifference in practice which developer must be used. The results with each are good. With ferrous-oxalate the very best results can be obtained, but I think that with either eikonogen, hydroquinone, or Rodinal can results be obtained with greater facility.

The following give good results, and may be relied upon:—

### HYDROQUINONE.

|    |                     |     |     |     |     |         |
|----|---------------------|-----|-----|-----|-----|---------|
| A. | Hydroquinone        | ... | ... | ... | ... | 150 gr. |
|    | Sodium sulphite     | ... | ... | ... | ... | 1 oz.   |
|    | Potassium bromide   | ... | ... | ... | ... | 20 gr.  |
|    | Water               | ... | ... | ... | ... | 20 oz.  |
| B. | Potassium carbonate | ... | ... | ... | ... | 2 oz.   |
|    | Sodium carbonate    | ... | ... | ... | ... | 2 "     |
|    | Water               | ... | ... | ... | ... | 20 "    |

Mix A and B in equal parts before using.

### EIKONOGEN.

|                   |     |     |     |     |     |        |
|-------------------|-----|-----|-----|-----|-----|--------|
| Eikonogen         | ... | ... | ... | ... | ... | 80 gr. |
| Sodium sulphite   | ... | ... | ... | ... | ... | 200 "  |
| Potassium bromide | ... | ... | ... | ... | ... | 10 "   |
| Sodium carbonate  | ... | ... | ... | ... | ... | 150 "  |
| Water             | ... | ... | ... | ... | ... | 20 oz. |

### THE ACID FIXING BATH.

|                         |     |     |     |     |     |       |
|-------------------------|-----|-----|-----|-----|-----|-------|
| Hyposulphite of soda    | ... | ... | ... | ... | ... | 4 oz. |
| Acid bisulphite of soda | ... | ... | ... | ... | ... | 1 "   |
| Water                   | ... | ... | ... | ... | ... | 20 "  |

After development place the print or opal from the developer into the acid fixing bath without washing. No acetic or other acid clearing bath is required.

It has been suggested in the earlier stages of the uranium toning process that an advantage accrued by developing the prints to some other colour than the usual black. But I do not think this is now insisted upon. For myself I have never been able to see the necessity, and some commercial experience of the process has not altered my opinion. As to the toning itself, there is no better form of bath than that which I gave many months since. After all, it was only a common-sense modification of Mr. Weir Brown's figures for a one-solution toning bath. This, having the disadvantage that it will not keep, the obvious course suggests itself to divide it into two, equal parts of which are mixed when required for use. The two solutions separately keep indefinitely and are always ready for use.

Professor Haddon, in the course of some observations made to the London and Provincial Photographic Society, suggested that there would be an advantage by increasing the proportion of nitrate of uranium to ferridcyanide of potassium. Whether this be so, and I have not been able to see the advantage so far, the solutions given will be found to work very admirably as they are, and mixed in equal parts.

As the chemicals are not expensive, or at least the quantities required of them are not large, there is perhaps little practical advantage in casting about for minor modifications. The usual method of toning a print is to put it into a dish containing a sufficiency of the mixed solutions. I do not, however, like this way so well as that about to be described.

Although it may seem lengthy in the description, in practice it is very simple indeed. The quantity of solution required is much less than by the bath method and the operation is completely under control.

Take a piece of glass larger than the print to be operated upon. Soak the print in clean cold water thoroughly. Lay it down wet, and face upwards, upon the sheet of glass. Take a large handful of cotton wool, soak it like a sponge in clean cold water, and rub it over the surface of the bromide print so as to remove the surplus liquid, and "squeegee" the print down flat upon the glass. Have some toning solution at hand in a saucer. Wring out the water from cotton wool, and soak it in the toning solution. Place a couple of fingers of the left hand upon the same side of the print, and with the cotton wool saturated with toning in the right hand, boldly and freely work it all over the face of the print, until the desired tone is there. Keep the



cotton wool well saturated and moving freely, and there will not be any staining.

When sufficiently toned remove any surplus ferricyanide solution with the wool, and proceed to wash the print with clean cold water with a fresh cotton wool sponge, until the yellow stain is removed from the fibre of the paper. Sometimes this does not all come out easily, especially if a very rough-surfaced and absorbent paper be employed. Many prefer a tinted to a white paper effect. The toning solution is made as follows:—

|        |                        |     |     |                   |
|--------|------------------------|-----|-----|-------------------|
| No. 1. | Ferricyanide potass... | ... | ... | 20 gr.            |
|        | Acetic acid ...        | ... | ... | $\frac{1}{2}$ oz. |
|        | Water ...              | ... | ... | 10 "              |
| No. 2. | Nitrate uranium ...    | ... | ... | 20 gr.            |
|        | Acetic acid ...        | ... | ... | $\frac{1}{2}$ oz. |
|        | Water ...              | ... | ... | 10 "              |

To be mixed in equal parts before required for use.

It is very necessary that the print should not be left soaking in water to wash out the colour. It has been suggested that the uranium deposit is not soluble, or is only very feebly soluble in water which is slightly acid, and this is no doubt so. However, in my opinion the balance of advantage lies in rubbing over the surface of the print with ordinary water and a plug of cotton wool until the yellow colour has been removed, and this removal is effected with very much more facility by this means than by allowing the print to soak.

It may be well now to add a few further remarks upon the tones that can be obtained by this method. In the first place, as with all other toning processes, the actual tone depends to a very large extent upon the gradations of the original picture. It is not possible to obtain a fine rich tone print from a negative which is itself lacking in contrast. It is not possible to do this by any process. *Ceteris paribus*, the tone from a print by a good negative must always be better than that from an indifferent one. As, however, uranium toning is an intensification process, it will be clear that the tendency is always to increase the depth of tone which can be obtained from any given negative, and it is therefore often the case, that a toned print can be secured of better quality than an untoned one. The richest and the reddest tones can only be obtained from negatives possessing a reasonable amount of gradation and contrast. There is, however, a very considerable range of tone for any print. The colour can be worked from the original black through a purplish red to brown, and from that to a burnt sienna or even red, according to the deposit upon the film. By this, I mean the amount of silver deposit of the print itself.

It will be seen from the foregoing remarks that the main points to be attended to are careful chemical manipulation and cleanliness, and given these features, successful results cannot fail to follow. I will now enumerate the possible faults, and suggest their remedies:—

(1) Pink stains. This may be taken to be caused by imperfect elimination of the hypo. If the process previously indicated, especially the use of the peroxide of hydrogen and careful washing, assisted by a squeegee, be attended to, this trouble will not occur.

(2) A double colour shows itself between the tones and half tones. This is also due to imperfect elimination of the hypo, but the result is probably due not to insufficient washing, but insufficient fixing. Generally in regard to these two defects, it may be said, that it is quite easy to wash out the hypo if the fixing process has been thorough and complete. The second fixing bath is a great safeguard.

(3) A green stain spreads itself all over the print. This is a defect due to the decomposition of the ferricyanide of potass. It is generally caused by using toning solution which has been too long mixed. Sometimes it will appear if the print be put into a strong acid bath with the intention of removing the yellow colour. Freshly mixed toning solution and a sufficiency of it will obviate the difficulty.

(4) The colour comes right out during the process of washing. This is caused by the bromide image being too weak and faint. The remedy is obvious: the stronger the original image the less the toned image will go back in the washing.

(5) The print is too red in colour. The defect is that the toning has been carried too far. All the colour can be removed from the print by placing it in a solution of carbonate of soda. After this and washing, the print can be retoned.

(6) The print is yellow. This is due to the self-stain of the toning solution. It is best avoided by soaking the print for a

quarter of an hour in cold water before toning, so as to avoid the toning solution coming into direct contact with the fibre of the paper.

In the foregoing remarks I have not attempted to distinguish between the toning process as applied to prints upon ordinary bromide paper and upon the "Roughest." Little or no difference will be found in the manipulation, but it will be found that with the very rough papers the most artistic effects can be obtained. With the latter it is easier to work because the paper is so much thicker and stronger. On the other hand, it requires a little more care, because the paper being so very thick holds more of the chemicals used in its fibres. I should like to add one remark. All pictures are not improved by toning them with uranium, nor all papers. It is the custom to run a new fad very hard. Some discrimination should be used. For suitable subjects there is no process with more potentiality for artistic translocation of light and shade than bromide toned with uranium.

## Societies' Meetings.

**Bournemouth.**—On 23rd ult., at a meeting of the above section, held at the Fine Art Gallery, 76, Old Christchurch Road, a paper on "Rodinal Developer," by Mr. Bowen, was read, in his absence, by the Secretary. Having considered the simplicity and portability of this developer, its power in cases of under-exposure, and other advantages, Mr. Bowen advocated its use in conjunction with a hydroquinone developer. By developing first in Rodinal until the detail was well out, and then transferring the plate to a hydroquinone bath for the sake of density, he obtained the best results. Two prints were exhibited as specimens of this combined development. The paper was followed by a discussion, after which Dr. Denman gave a most interesting demonstration on "Enlargement," showing by means of his enlarging camera the various steps in the process, and pointing out the difficulties to be surmounted if good enlargements were to be obtained. This demonstration—highly instructive and valuable as it was—was much appreciated by the members present.

**Bristol and West of England.**—On 22nd ult. Mr. Howson, of the Ilford Company, gave a most interesting demonstration of their "Printing-out Paper, and Isochromatic Plates." The paper requires printing only a little over the depth the finished print should be, and is 20 per cent. quicker printing than albumenised. After washing for ten or fifteen minutes, to take off surplus silver, toning only takes a few minutes. It is then washed in clean water for some ten minutes more, fixed for fifteen minutes, and washed two hours in running water. The various prints shown, both glazed and matt-surfaced, were simply perfect. Yellowness is caused by using bath for too many prints, exhausting the gold, or too much sulphocyanide. The bath must never have more gold added, but be thrown away when exhausted. A pint of solution (in which are two grains of gold) should tone one or one and a half sheets of paper, according to strength of negatives. Prints fixed without toning give a nice Bartolozzi red, and by varying time of toning, almost any colour is obtainable, from red to blue. The emulsion being made of hard gelatine, this paper will stand rougher handling than all other papers of this sort.

**Gardiff.**—At the usual meeting on the 25th ult., Mr. C. F. Gooch in the chair, Mr. T. Forrest read a paper and gave a practical demonstration of the wet-plate process. The lecturer stated that although this process was considered obsolete it was the process *par excellence* for making lantern slides. In support of this a transparency was made and placed in the lantern, and Mr. Forrest's claim as to transparency in the shadows was fully borne out. For making enlarged negatives also the wet process was eminently suited, as, failing the first being satisfactory, the operator need have no scruples as to the expense of making others, as the plate could be cleaned and recoated half-a-dozen times and yet the cost would be much under the price of one dry plate.

**Eastbourne.**—A meeting was held on the 23rd ult. to elect officers, form rules, etc. The Rev. W. G. Whittam was elected President, Mr. H. M. Whitley Vice-President, Mr. H. Hatgood Treasurer, Mr. E. Burnham Secretary. Amongst other rules may be mentioned: Society open to both sexes, amateur or professional; subscription, 7s. 6d. per annum, with an entrance fee of 2s. 6d. Both dark-room and meeting-room have been provided. Visitors to Eastbourne are allowed to join on payment of small fee for short periods.

**East London.**—A special general meeting for election of officers for the ensuing year was held on the 22nd ult., being an adjournment from the 8th. The chair was occupied by Mr. F. Uihindell, Vice-President. The following gentlemen were elected: President, Dr. F. J. Warwick; Vice-Presidents, Mr. E. Stone, Mr. C. Tylee, Mr. F. Uffindell; Council, Messrs. W. J. F. Child, G. F. Eeles, Dr.



Evans, E. M. Minns, S. Markheim, G. S. Pasco, R. Tylee, and H. G. Wallis; Hon. Secretary and Treasurer, Mr. M. A. Wilkinson, 11, Ferncliffe Road, Dalston, N.E. The Secretary's report will be read April 26th, the end of the financial year of the Society.

**Great Yarmouth.**—The members met on the 23rd ult., at the Secretary's house, to fix the summer programme, and it was arranged that there should be outings in May, June, and August. Several places of interest were proposed in Norfolk and Suffolk, and the Secretary was requested to give all the members notice of the different places, so that a ballot may be taken. It was also suggested that the club should hire a wherry yacht during the summer for a week's trip on the Norfolk Broads, when the members will have an opportunity of getting some shots on these most picturesque and interesting waters, besides enjoying a pleasant holiday. It was also arranged that a circulating portfolio should be formed and sent round to the members four times a year, to be issued on each of the usual quarter days, the first issue to be made as soon as possible; and at the suggestion of Mr. Arnott, the portfolio is to be on view at the Free Library for a fortnight each time it is issued. This will give the public and non-members an opportunity of seeing the work done by the members. Silver and bronze medals and certificates are to be given to successful exhibitors at the end of each year, the judging to be done by the members themselves, each one recording his votes each time the portfolio is sent round. During the evening the Secretary exhibited a half-plate twin-lens Artist camera, kindly lent by the London Stereoscopic Co., which was greatly admired by the members, as it possesses the unique advantage of the picture being visible during the exposure, and also the advantage of being easily focussed up to the very moment of exposure.

**Hackney.**—The ordinary meeting was held on the 24th ult., Mr. W. P. Dando in the chair. The Hon. Secretary announced that several new books had been added to the library and could be lent to members on application. Mr. J. O. Grant showed a print, consisting of slips pasted together forming a picture, which had been toned with platinum, and uranium, with various quantities of sulphuric acid added to the extent of about 20 drops. The tones obtained were from the plain platinum to a deepish blue, the result of about two hours' toning. The Hon. Secretary showed Martin's frost study, and india-rubber grooving for lantern slides, and distributed a few samples of Jacoby's collodio print-out paper. Mr. Hensler asked which was the best lens to use in confined situations. The Hon. Secretary stated that Mr. Crouch advocated a half-plate set as 4, 8 $\frac{1}{2}$ , and 12 in. foci. Mr. Dando preferred a 6 in. Dr. Gerard Smith said extreme angles of view were rather unsatisfactory, as false ideas of views were given, and which he exemplified in his lecture on "Egypt," several slides of which represented mountains out of all proportion, some being about 100 yards, and to all appearances on screen looked ten miles away. Some capital views of Egypt were shown, and the subject was humorously treated by the Doctor.

**Herefordshire.**—The last lantern evening was held on the 22nd ult., the room being well filled with members and friends; the lantern was manipulated by Mr. Horth. Mr. Parker opened the proceedings, and explained that the series consisted of four classes—River scenery and seascape, portraiture, architecture, copying from engravings—and they proved to be a very fine series. In addition to these Mr. C. Knight kindly lent a series of twenty slides illustrating the wreck of the *Eider* s.s. off the coast of the Isle of Wight in February last, which were particularly interesting, showing every detail connected therewith, the slides being remarkably good.

**Holborn Camera Club.**—Mr. N. Baker showed some very fine slides of various parts of Warwickshire on the 25th ult. They included scenes in Coventry, Warwick, Stratford-upon-Avon, Kenilworth, and various other picturesque spots in that county.

**Ireland.**—On the 24th ult. Professor J. A. Scott, Vice-President, in the chair, Mr. J. A. C. Ruthven gave a most interesting lecture on "Norway," illustrated by some excellent slides, and by his graphic description of the wonders of the fiords, snow-capped mountains and glaciers, excited a general desire amongst his audience to visit the far-famed land of the vikings. A vote of thanks was passed to Mr. Ruthven, after which a Purse camera was exhibited by Mr. Hedley, and also an ingenious scientific toy known as the "Tachyscope," on the principle of the well-known "wheel of life," in which figures of men and animals were seen to go through the most life-like movements equal in every respect to Professor Muybridge's Zoopraxiscope.

**Kensington and Bayswater.**—A meeting was held on the 28th ult., Mr. Leslie Selby presiding. The questions from the question-box gave rise to considerable discussion. It was decided that in future, questions should be read at one meeting and discussed at the next. An exhibition of lantern slides, principally from photographs by members and their friends, took place. The collection consisted of river and wood scenery, copies from woodcuts and engravings, portraits and interiors, and several photographs of microscopic slides, among which were a very fine group of diatoms, parts of insects, etc. The exhibition of the different tones capable of being produced by varying the exposure and development gained considerable atten-

tion. Several new members gave in their names and paid their subscriptions.

**Lowestoft.**—The annual meeting was held on the 17th ult., when the following gentlemen were elected to fill the different offices for the current year:—Capt. R. Horman-Fisher, F.S.A., President; Mr. W. Stringfield, Chairman; Mr. W. J. Roberts, Treasurer; Committee, Messrs. F. G. Mayhew, J. Rose, F. W. Emuss, A. M. Smith, A. Young, and F. N. Smith; Hon. Secretary, Miss A. Lee-Stringfield.

**North Middlesex.**—On 28th ult., Mr. F. Gandon in the chair, Mr. C. Beadle delivered a lecture on "Enlarging by Artificial Light with the use of a Lantern." Having dealt minutely with all the factors to be considered, the lecturer proceeded to explain his apparatus and to make a 15 $\frac{1}{2}$  by 12 print from a half-plate by means of it. The apparatus consisted of a lightly made box 3 ft. long, showing a light-tight door at each end and a light-tight lid. A movable platform fitted inside the box and rested on the bottom. Upon one end of this a camera bearing a 6 in. lens was attached by the tripod screw; at the other end was a frame glazed with clear glass, having behind and in contact a sheet of ground-glass; this frame moved back and forwards on runners. The negative was fitted in a rabbit in the doorway at the end of the box to which the camera was fitted. The lens and focussing screen were placed roughly in position according to the distances given in enlarging tables. Exact focus was obtained by looking through the door behind the focussing screen, and moving the lens and screen to their proper positions. These points were marked upon the platform for future use. A sheet of Eastman's Rapid bromide paper was then by non-actinic light placed in the frame face to the clear glass, and kept flat by the ground-glass placed at the back of it. The frame or slide being slipped back into position, the box was closed, with the exception of the door in front of the negative. Exposure was made by magnesium ribbon burned at 1 in. from the negative, care being taken to secure even illumination by moving the ribbon from point to point. As the negative was rather dense, and stop  $f/16$  used, 6 ft. of ribbon was required. Mr. Beadle used ferrous oxalate strongly restrained, and applied a normal developer by means of a tuft of cotton wool, to bring up lagging detail when necessary. The print proved an excellent one. Contact prints were then made on Eastman's Rapid and Permanent paper for the benefit of the younger members who had not previously worked the process. The Eastman Co. had kindly forwarded a supply of bromide paper for the evening's work. A discussion followed, questions on points of detail being asked and answered. Mr. Beadle stated that he commonly used the apparatus for daylight enlarging. He fitted the bromide paper or sensitive plate in the dark-room, carried the box into the garden, and standing it on end made the exposure by opening the door and exposing the negative to the sky. A lecture on the "Detection of Crime by Photography" by Dr. Jeserich, was by the kindness of the P.S.G.B. brought before the Society as one of the affiliated Societies. The lecture was thoroughly wrought out and of absorbing interest. Circulars, catalogues, and samples of paper sent by Messrs. Mawson and Swan, the Stereoscopic Company, Griffin and Co., and Otto Scholzig, were distributed among the members. Forty were present and two visitors. The next meeting will be held on April 11th, when Mr. J. Gale will favour the Society with an address illustrated by lantern slides. Visitors will be heartily welcome.

**Putney.**—On the 26th ult., the Rev. L. Macdona in the chair, a practical paper on "Printing Processes," the sixth of the series, was read by Mr. J. A. Hodges, who carefully described the principal features of the various printing methods, silver, bromide, platinum, etc. The preparation of home-sensitised paper was fully dealt with. After some discussion, a number of fine slides illustrating a tour in North Devon were shown, the lecturer's graphic and amusing description being highly appreciated.

**Richmond.**—At the meeting on 25th ult. Mr. Davis presided. Mr. Cembrano was prevented by ill-health from giving his paper on "Architectural Photography." Instead, there was read by the Secretary the translation of Dr. Jeserich's paper on "Photography applied to the Detection of Crime," kindly lent by the P.S.G.B., which, with its accompanying lantern illustrations, proved of the greatest possible interest as showing how photography—and especially photo-micrography—has been made by the learned doctor to supply irrefutable evidence, where no other means would avail, of the identity of criminals, the falsification of documents, and other indispensable links in the chain to drag the malefactor to justice; how, too, it has been the direct means of clearing wrongly suspected parties; and what a vast field of usefulness in the direction indicated the science is destined to fill.

**Sheffield.**—An exhibition of lantern slides, the work of members, was held on the 23rd ult. Mr. Strangeways showed some excellent pictures of Durham and Northumbrian scenery; Mr. Maleham a large selection of views of high merit, in North Wales and on the Yorkshire coast. Some good slides were also shown by Messrs. Rawson, Webster, and Brooks. Mr. G. T. Newsholme kindly officiated at the lantern.



**South London.**—On the 21st ult., ordinary meeting, the evening was devoted to the exhibition of lantern slides by members, with criticism of same, which will no doubt prove very useful in their later work this season. The chief exhibitors were Messrs. Dishman, Esler, Fellows, Farmer, and Oakden.

**Wigan.**—Fortnightly meeting on the 23rd ult. It was decided to hold a members' lantern slide competition, the slides to be judged on the 4th May next. Mr. J. H. Atherton had prepared a paper on "Stereoscopic Photography," which, in the unavoidable absence of this gentleman, was read by the Hon. Secretary (Mr. F. Betty). Mr. Atherton sent his Beck's stereoscope and a number of beautiful transparencies, which were greatly admired by the members. Mr. Wortlington exhibited an ingenious stereoscopic shutter of his own construction, Mr. Wardman a very neat adapter for light, single dark slides, and Messrs. Taylor and Hobson, of Leicester, very kindly sent samples of their well-known lenses in various stages of construction. It was decided to hold a competition on a larger scale than the above-mentioned some time after the end of the season, and two or three valuable prizes were offered by members.

**W. London.**—Ordinary meeting 25th ult., the President in the chair. Mr. Whiting read a paper bearing on the art side of photography, rules of composition, principles of selection, etc., illustrated by a number of lantern slides, which showed that Mr. Whiting, unlike some photographers, carries into practice the theory he preaches, and evidently with success. He exhibited an ingenious view-meter of his own construction capable of being used with different lenses. The President announced that the annual dinner would take place on the 13th May.

**Wolverhampton.**—The annual meeting was held on the 22nd ult. The committee's report showed a steady increase in the number of members, together with a marked improvement in the general work of the Society. The officers elected for the ensuing year were as follows:—President, H. Holcroft, Esq., M.A., F.C.S.; Vice-President, Lyons Wright, Esq.; Hon. Treasurer, Mr. F. J. Gibson; Committee, Messrs. T. Ironmonger, S. R. Rhodes, W. Ratcliffe, W. E. Oakley, J. Stokes, E. A. White, W. German, and G. Taylor; Hon. Secretaries, Messrs. J. W. Evans and J. Gale. A programme of papers, demonstrations, etc., for the next six months has been prepared, which will embrace most branches of photographic work. This, it is to be hoped, will still further the interest already taken in the work. A question will be brought forward at the April meeting as to the possibility of making a photographic survey of Wolverhampton and district, to include photographs of ancient and historical buildings, churches, ruins, and objects of interest, many of which are to be found in the neighbourhood.

### SOCIETIES' FIXTURES.

- April 1.—CROYDON.  
 „ 1.—LEWISHAM.—Annual meeting.  
 „ 1.—WEST SURREY.—Annual exhibition.  
 „ 2.—WEST SURREY.—Annual exhibition.  
 „ 4.—EASTBOURNE.—Ordinary meeting.  
 „ 4.—BELFAST.—“Notes on a Tour in S. Switzerland with the Camera,” by L. E. Collins.  
 „ 6.—BLACKHEATH.  
 „ 6.—ELIZABETHAN.—Miscellaneous pictures.  
 „ 6.—ISLE OF THANET.—“London to Niagara.”  
 „ 6.—LEYSTONSTONE.—“Silver printing.”  
 „ 7.—LEIGH.—“Processes,” by J. Weston.

## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

### QUERIES.

5554. **Ilford Developer.**—What benefit is nitric acid in Ilford developer? Image thoroughly out; how can I bring it to same density as with the soda developer? My plates when developed with Ilford formulae and fixed in hypo bath always have a thin brown cast.—TEMPUS FUUGIT.

5555. **Background.**—How shall I proceed to make a vignette background?—TEMPUS FUUGIT.

5556. **Renovating Background.**—I have a background (Seabury's) in flatted oils on canvas. It has got mildewed through being in a damp place. I have washed it with Sunlight soap, but it is still faded. Will boiled or raw linseed oil renovate it?—TEMPUS FUUGIT.

April 7.—LONDON AND PROVINCIAL.—“Collodio-bromide Emulsion,” by Alex Mackie.

„ 7.—LEEDS.—“Photography” 1891 prize slides.

„ 7.—HUDDERSFIELD.—“Amateur Photography.”

„ 7.—GLASGOW.

„ 8.—RICHMOND.—“Pictorial Composition,” by C. H. Davis.

„ 8.—WEST LONDON.—Lantern evening.

„ 8.—CROYDON.

„ 9.—GREAT YARMOUTH.—Exhibition of 1891 prize slides.

**The Evolution of Modern Photography.**—On the 15th ult., before the members of the Leeds Philosophical and Literary Society, Professor R. Meldola, F.R.S., delivered an interesting lecture on “The Evolution of Modern Photography.” There was a large attendance. He remarked that as far back as the thirteenth century Albertus Magnus observed that the substance called lunar caustic, or nitrate of silver, darkened on the skin. Fabricius, about 1556, and other observers at a later date, noted that under some conditions salts of silver were capable of undergoing discolouration, but down to 1777 the sum total of the experiments amounted to little more than the fact that the compounds of silver were sensible to light. The modern photographer, who focussed his view on the ground glass screen at the back of his camera, was using an invention which had been evolved from a discovery made in Italy as far back as the year 1590; when Jean Baptiste Porta invented the camera-obscura. The desire to fix the camera image on a sensitive surface was only natural, and M. Niepce, of Chalon-sur-Saone, commenced experiments with that object about 1814. The experiments of Daguerre were noticed, and the partnership formed between him and Niepce, the process known as the Daguerreotype being disclosed in 1839. While Daguerre was at work, an Englishman, William Henry Fox Talbot, had been experimenting, and in 1835 he succeeded in producing a picture upon sensitive paper. The first person who ever took a photograph on glass was Sir John Herschell, who photographed the 40 ft. reflector at Slough in 1839. The lecturer described the wet and dry collodion processes, and alluded to the advantages of modern dry plates for instantaneous photography, showing on the screen photographs of a beach group, a trotting horse, an express train, leap-frog, the explosion of a 12 in. shell, and waves breaking on the sea shore. He noticed next the application of the instantaneous process to natural phenomena, and exhibited photographs of ice crystals, a sea of mist riding over the Malvern Hills, snowflakes, clouds, and flashes of lightning, remarking, with regard to the latter, that the conventional, zigzag fork of the artist had no existence in nature, and that the lightning flash resembled much more the ordinary electric spark of the laboratory. The application of instantaneous photography to physical phenomena by means of the electric spark was next explained, and photographs were thrown on the screen of a bullet shot from a Martini-Henry rifle, the illustrations showing the passage of the bullet through glass, and also the air waves produced by its passage. Reference was then made to the application of photography to astronomy, and photographs were exhibited of the great nebulae in Orion, the exposure having been for 205 minutes, and the nebulae in Andromeda, with an exposure of 240 minutes.

**Messrs. Davenport and Co.**, of 32, Parkhouse Street, Southampton Street, Camberwell S.E., write to inform us that they intend to place upon the market the portable dark-room suggested by a correspondent last week. They will introduce an efficient ventilator, and will distinguish it by the name of the Conical Developing Tent.

5557. **Mountant.**—I cannot get prints to adhere. I have used your recipe you kindly gave some months ago—it was: use either starch or flour—which I found excellent until I got these mounts, but the prints turn up at every corner and edge.—TEMPUS FUUGIT.

5558. **Fixing Solution.**—I keep my fixing solution in a lead tray. Will it deteriorate plates after developing?—TEMPUS FUUGIT.

5559. **Substitute for Sodium Hyposulphite.**—Could any reader kindly inform me if there is a substitute for hypo soda with which I can fix plates, also prints?—H. B.

5560. **Permits.**—Is it necessary to have a permit for use of camera at the following places: Calais, Paris, Brussels, Antwerp, Berlin, and their environs?—W. L.

5561. **Holland and Belgium.**—I am contemplating a photographic tour in Holland and Belgium. Will someone kindly inform me if there are any restrictions to ordinary photographing?—PERIODIC.

5562. **Finder.**—The finder to my hand-camera does not give identical view with that of the lens. It shows less foreground and more sky. The centre of finder lens is  $1\frac{1}{2}$  in. to left and  $2\frac{1}{2}$  in. above centre of



camera lens. By tilting back end of finder upwards about  $\frac{1}{4}$  in., the error is corrected, but the finder is then out of the horizontal, and I could not fix it in this position as a permanency. What cure? Camera and finder are by recognised makers.—NAMNETBOO.

5563. **Removing Mildew.**—What is the best way to get mildew or damp stains off engravings?—STOON.

5564. **Removing Ink Stains.**—Will any reader kindly let me know whether ink stains can be taken out of photographs without damage?—STOON.

5565. **Lens.**—Will any one kindly tell me what focus lens is best to use with a hand-camera I am making,  $\frac{1}{4}$ ,  $\frac{5}{8}$ , or 6 in. focus (quarter-plate)? Also what distance will the lens have to be fixed from the plate?—A. P. S.

5566. **Lantern Slides.**—Could any one tell me where I could hire lantern slides descriptive of Our Lord's Passion, for exhibition in Holy Week, or slides descriptive of the Holy Land?—LUX.

5567. **Dishes.**—Will some reader kindly inform me where, and the price, I can get ebonite dishes with straight sides and without ribs, as I find the developer is always coming over when using the ordinary sloping side dishes?—BLANCHE.

5568. **The Wye Valley.**—For any information about the Wye Valley, between Hereford and Monmouth, as a field for amateur photography, I should feel grateful. I am thinking of making that neighbourhood a holiday resort for two or three weeks in July, and ask from your readers who have already visited the locality some hints as to routes, places of interest, apartments, which would prove useful to a stranger. In return, I should be happy to give similar information about Trefriw, N. Wales, where I spent a most delightful holiday last summer, and succeeded in obtaining over fifty pictures in the immediate neighbourhood.

5569. **Paris and Environs.**—Will anyone kindly tell me if there are any good subjects for the camera in Paris and vicinity where photography is permitted. A list of a few such would much oblige.—LUX.

5570. **Camunilux.**—Will some reader kindly give me his experience of the American Camera Co.'s Guineas "Camunilux"? Can it really be turned to the different purposes that the Company claim for it?—J. DEANE.

5571. **Lantern Slides.**—Can any reader inform me if there are any printing-out lantern plates in the market? Could I prepare them myself? If so, can you recommend me a good formula?—SENSITIVE.

5572. **Glueing Bellows.**—I have been making some camera bellows, and used ordinary glue to glue the black cloth to the leather. But I find that when dry it is too stiff to put the creases in? Could any amateur bellows maker tell me what to glue the cloth to the leather with—something that would be strong and pliable when dry?—A. B. M.

5573. **Plates for Hand-Camera.**—Should like to know of a good brand for above for use on South Coast at Easter. Have been told Ilford ordinary are fast enough. Should be glad to know if this is correct, and what developer to use.—H. T. B.

5574. **Hand-Camera.**—Will some reader kindly state exact focal length of single lens and value of each stop supplied with the "Talmer" (1892 pattern), also slowest and fastest speed of shutter? Any other information will oblige.—H. T. B.

5575. **Lens.**—Can any brother amateur enlighten me on the following points? (1) Is the single view lens much preferable to the R. R. (when well stopped down) for landscapes work? (2) Is Lancaster's Recti-graph any good for detective work?—A. W.

5576. **Photo. Soc.**—I should be glad to hear particulars of some photographic societies in the immediate neighbourhood of Earl's Court with dark-room attached.—N. M. H.

5577. **Exposure.**—I should be obliged for information regarding exposure of Ilford rapid bromide paper, 10 by 8 size, printed by means of a Tylar's Metamorphoser lantern from a lantern slide negative of about the usual density. The lamp is a four 2 in. wick one. Also the distance away the lantern requires to be.—N. M. H.

5578. **Making Lantern Slide.**—Would some one kindly inform me what exposure is necessary for one of Thomas's lantern plates in Griffiths' lantern slide camera behind an ordinary negative and exposed to a grey cloudy sky?—N. M. H.

5579. **Developing Eastman's Films.**—When developing Eastman's transparent films properly exposed, they come out all at once and with no contrast. When adding bromide, they develop slowly with contrast but no detail. I generally use Eastman's developing powders, but have tried hydroquinone. As I want to develop about 130 by 4 photographs I should be pleased if some reader could explain or recommend some new developer.—PALM.

## QUERIES UNANSWERED.

Feb. 26.—Nos. 5476, 5482.

Mar. 4.—Nos. 5492, 5495.

„ 25.—Nos. 5520, 5542, 5544, 5547, 5548.

## ANSWERS.

5481. **Shutter.**—To make a rebounding shutter work at its lowest speed the moving slide must be allowed to rise as far as possible without getting out of gear, and the spring or band must be of just sufficient strength to throw it that distance. Even when working at medium speed the exposure would not be too short for well-lighted, open views, using  $f/11$  or  $f/16$  with a medium plate.—THE SMITH.

5489. **Spots in Transparencies.**—It is impossible to say without seeing a specimen. Send one to the Editor, and I think he will say they are caused by air bubbles, but if all the precautions you mention are taken, it is strange how they could occur. There is no necessity to steep the plate in water before development.—THE SMITH.

5501. **Stereoscope.**—If this querist will write me, care of Editor, I will gladly furnish him with sketch and particulars. A lens of shorter focus than  $\frac{7}{8}$  in. would be an improvement.—THE SMITH.

5508. **Centre of Negative Darker than Sides.**—Either the lens does not cover the plate, or the fault is flare spot showing when a small stop is used. If the latter, the makers would rectify.—THE SMITH.

5516. **Intensifier.**—My answer to "Pyro" last week regarding the uranium intensifier was slightly incorrect. It should be:

Gold nitrate .. .. . 50 gr.  
Distilled water .. .. . 1 oz.

—U. B. SMART.

5519. **Red Ferro-Prussiate Prints.**—The prints are first fixed by washing, and then immersed in a solution of nitrate of silver (not more than 20 gr. per oz.) Wash well, and develop in ferrous oxalate. (Dr. Lagrange).—THE SMITH.

5524. **Detective Lens.**—The price you name is very low for a high-class lens, but Wray's  $\frac{1}{4}$  in. is very little in excess of it, and is also a half-plate wide-angle when stopped down to  $f/16$ .—THE SMITH.

5531. **Copying Photograph on Glass.**—It is no use taking the black varnish off the back and thinking of using it as a negative, as it is nearly certain to be too thin for that, but you can copy it easily enough as follows:—Place the photograph opposite lens of your camera, same as though you were copying a print, first making sure that the glass is perfectly clean and dry, then place 25 grains of magnesium powder in a flash lamp, and just before igniting the powder breathe gently on the glass, photograph so as to dull the surface and prevent the light shining on it and spoiling the plate.—The powder must then be ignited just above the lens. If using pyro and ammonia developer, begin with normal developer, and when half developed keep increasing the ammonia gently till in about seven or eight minutes development will be about correct.—CHERRISI.

5531. **Copying Photograph on Glass.**—The black varnish may be scraped off, and the photograph will be found to be a thin negative by transmitted light. Print by contact on gelatin-chloride or bromide paper, or a transparency may be made from it as a prelude to obtaining an enlarged negative. Very good prints may be obtained this way. Of course, if the black varnish is on the film side of the glass it must not be scraped, but removed by soaking in methylated spirit, and will require great care.—THE SMITH.

5532. **Opals** are not sensitised (in the ordinary meaning of the word), but are coated with emulsion in the same way as plates. The formula and particulars for making the emulsion and coating would be too voluminous for this column, but something on the subject from the pen of Mr. Wall may be expected shortly. See page 228.—THE SMITH.

5533. **Sensitised Paper.**—If albumenised silver paper is meant, the paper can be obtained from any dealer and sensitised by floating on a solution of silver nitrate, 60 gr. to the ounce.—THE SMITH.

5539. **Varnishing.**—The polish on cameras and dark-slides is best French polish, skilfully applied, and finished off with methylated spirit having dissolved in it a small quantity of gum sandarac, then called methylated finish, but very few know of this, as it is a trade wrinkle, and shopkeepers, when asked for "finish," give you simply the spirit. The sandarac imparts a high lustre to the surface of the polish, but it requires much practice to be certain of success, as there is the danger of polishing the French polish quite off again. A thin quick-drying varnish that may suit you can be easily made by mixing together the following:—

French polish .. .. . 1 fluid oz.  
Glaze .. .. . 1  
White hard varnish .. .. . 2

Or if you like a lighter colour, leave out the polish and mix equal parts of glaze and white hard varnish. Apply to the wood thinly and evenly with a broad brush, set aside for one day, then go all over the work with a piece of fine glass paper, No. 0, or not coarser than No. 1, then dust thoroughly, and finish off by giving it another coat of the varnish. Be careful to obtain the above ingredients at a thoroughly good dealer's.—H. S. LARGE.

5539. **Varnishing.**—The wood must be perfectly dry, and the varnish applied in a warm room. Dissolve without heat—

Shellac .. .. . 1 oz.  
Wood naphtha .. .. . 5

For very fine work the clear liquid may be decanted

from the sediment, but for coarse work the whole may be shaken up together. So says the "Kernal."—CYANIN.

5541. **West Kirby.**—This place is near to the water at high tide, but at low tide about a mile and a half from it. There is no boating, and the beach is one of the dreariest I have ever seen. Apartments may easily be obtained in the village, but I am afraid after developing any snapshots obtained therein, you will feel rather snappy. However, a few good pictures may be obtained in the adjoining villages of Caldy and Thurston, or at Hilbers Island, where a few hours may be spent very pleasantly. West Kirby is noted for the salubrity of its air, but not for the sublimity of its scenery.—HEDLEY.

5541. **West Kirby.**—After two years' residence at West Kirby, I do not think you will find much to photograph. With 10 and 12 ft. tides, such as we had for the past week, the water does not come up within a distance of half a mile, and when we have 18 and 20 ft. tides does not remain long. There is no boating, but this you can get at Hoylake, about  $\frac{1}{2}$  miles distance. Hilbers Island, however, is well worth a visit and a number of good photographs ought to be obtained. If you do not object to walking in the neighbourhood around, you can find some good subjects. Caldy, about twenty minutes' walk, has several good bits, and the Manor House and grounds are worth several plates if you can obtain permission from the Lord of the Manor Mr. Barton. Thurston, three miles off, has a number of good subjects. On the top of the moor are the Druidical stones where the ancients used to offer their sacrifices. The interior of the church is well worth a plate, permission easily obtained from the vicar. Irby Old Hall about half a mile from Thurston, is a good subject. In the old village of West Kirby you may find several good pictures, but I do not recommend the place for snap-shooting. New Brighton is better apartments can be easily obtained. The place is a good one for sunsets, though Hoylake is better. Enquire for writer at Photographic Rooms, 3, Lord Street, Liverpool, who will be pleased to direct you.—E. M. TUNSTALL, late Hon. Sec.

5543. **Mountant.**—Le Page's fish glue can be used, but do not mount the photographs of your best girl with this, or the chances are you would be a very unhappy man.—H. S. LARGE.

5545. **Demon Camera.**—It is, I believe, possible to get a picture with the above-named camera. I had one for a month or two, but could not by any manner of means get a negative at all. "Demon" should, if he wants a cheap article, rather lay out another 5s., and get a Presto camera, price, with a good set of chemicals, 10s. 6d.—W. B. SMART.

5545. **Demon Camera.**—I have tried the Demon, and have never succeeded in getting a picture fit to be seen with it. If "Demon" wants a cheap camera that will really take a good photo, he should invest 2s. 6d. in a Wormald's "Photomimus," with which I have taken pictures quite equal to those taken with an expensive camera.—A. M. C.

5545. **Encastic Paste.**—


Pure white wax .. .. . 500 gr.  
Gum elemi .. .. . 10  
Benzole .. .. . 4 dr.  
Essence of lavender .. .. . 6  
Oil of spike .. .. . 1

Melt the wax and elemi, add the benzole and other ingredients, and allow to cool, stirring frequently. (Wall's "Dictionary.")—PERIODIC.

5546. **Encastic Paste.**—The following is a very simple paste, and is given in Wall's "Dictionary" as "Dr. Eder's cerate paste":—

Pure white wax .. .. . 100 gr.  
Dammar varnish .. .. . 40 min.  
Pure oil of turpentine .. .. . 100

Melt the wax, add the other ingredients, allow to cool, stirring frequently. Smear a little of the paste over the print with a tuft of cotton wool, and polish with a clean piece till the surface is free from markings.—CYANIN.

5549. **Hand-camera.**—Take a piece of good quality iron wire (hard), say an old bicycle spoke, take the required length, and bend into shape thus , file the corners true square and the ends smooth, cut a slot along the bottom of camera from the back towards the front long enough to admit of the middle part of this lever, one end of which should come immediately underneath the foremost plate, the other end to be outside at the back. The size of wood mentioned is very thin, but in any case another piece would have to be used for covering in the lever, and for forming a level floor for the plates to travel over, so perhaps it will be better for you to cut the slot in this at the bottom, i.e., underneath it. The inside end of lever should be long enough to reach about 1 in. past the middle of the plate. Write me through the Editor and I will send you a pattern.—H. S. LARGE.

5550. **Enamelling.**—Clean thoroughly, and polish a glass plate with French chalk, then coat it with enamel collodion. Now make a solution of gelatine (10 gr. to the oz. of water), and dip the collodionised plate and the print into it, bringing them into contact (print face down). Now remove them carefully, and squeeze into optical contact, and allow to dry. When thoroughly dry, peel off the print, which should bear the collodion film with it.—W. B. SMART.

5550. **Enamelling.**—Clean a glass plate with



French chalk and polish thoroughly; now coat the plate with enamel collodion, and having made a solution of gelatine, 10 gr. to the ounce of distilled water, slip the collodionised plate and the print carefully into the solution of gelatine, avoiding air bubbles; bring the print face downwards into contact with the coated plate, remove from the solution, and squeeze into optical contact, and allow to dry. When thoroughly dry, raise one corner with a knife, and the print will strip from the glass, bearing the collodion film with it. The above is from Wall's "Dictionary."

—W. R. P.

**5551. Actinograph Speed.**—This can only be known accurately by a personal test, as no brand of plates can always be the same rapidly. I have tested the plates in question for the scale of my exposure meter, and make them to be: Wratten ordinary, 5; instantaneous, 33; drop shutter, 40; Mawson, 65. As I have carefully tested the relation of Marion's actinograph speeds as marked on their plates, and find it to be 2 to 3 on my scale, the above plates would be approximately 3, 22, 27, and 43 actinograph speed, but it is quite possible that Wratten's present issue may be more rapid. Why not test them yourself? The use of any exposure instrument is to calculate variations from one trial exposure, and this exposure should be made by the user.—ALFRED WATKINS.

**5552. Focussing.**—"Focussing" does not state the focal length of his lens. He should focus sharply on objects 5, 10, 15, 20, and 30 ft. distant, and mark the position of the focussing screen on baseboard of camera. Of course, he would need to have a piece of white cardboard, or preferably a slip of ivory, fastened on the outside of the camera box, with marks corresponding with those on the baseboard. Then he would need to fasten a handle on to the back or front of the camera (front or back extension), so as to project outside the box, to enable him to adjust the focus. For full instructions for finding the nearest point, beyond which all will be in focus for lenses of different focal lengths and apertures, see AMATEUR PHOTOGRAPHER for Nov. 27, 1891.—W. B. SMART.

**5553. Printing on Wood.**—To sensitise a wood block, coat same with uranium collodion, containing a little nitrate of silver small enough to produce no injurious effect on the wood. If desired when the picture is printed on the block, the collodion may be removed by cotton wool moistened with ether, and an excellent image will be seen on the surface of the wood, which is then in a fit state for drawing and engraving purposes.—REVIEW.

**5554. Printing on Wood.**—I give the following by way of a suggestion. It is used to obtain good results upon silk, satin, and such materials, and I cannot see, therefore, why it should not be successfully applied to wood:

|                         |        |
|-------------------------|--------|
| Tannin .. .. .          | 60 gr. |
| Distilled water .. .    | 8½ oz. |
| Dissolve—               |        |
| Common salt .. .. .     | 60 gr. |
| Arrowroot .. .. .       | 80 ..  |
| Acetic acid .. .. .     | ½ oz.  |
| Distilled water .. .. . | 8½ ..  |

Dissolve the arrowroot by gentle heat, add the remainder of ingredients. Mix the two solutions, filter, and immerse the wood, which should be washed well to free it from all contaminations. When thoroughly dry, sensitise in the following bath:

|                         |         |
|-------------------------|---------|
| Nitrate of silver .. .  | 50 gr.  |
| Distilled water .. .. . | 1 oz.   |
| Nitric .. .. .          | ½ drop. |

Dry, print, wash in the usual way, but tone in the sulphocyanide bath.—CYANIN.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED : AM : PHOT.

**Yn. SENOR.**—The salt you sent was sulphite, and pure.

**H. C. BUTTERWORTH.**—The lenses you name are reliable; we have used one for some time.

**T. BALLANTYNE.**—You cannot compete for a medal of the same value in Monthly Competitions at present. Next year we shall alter that rule. For the large competitions you could compete as usual, and would, if successful, be awarded a Niepce medal. We hope to publish Special Number early next month, and we may want to use your MSS. for it.

**G. E. T.**—Dissolve 5 parts of chrome alum in 100 parts of water, add sufficient liq. ammonia "880 to form a permanent precipitate, then filter and use immediately; it keeps well. Talc and French chalk are not synonymous. The pumice is alright, though somewhat fine; you have evidently obtained what is called P. lap. pumic. subtil., whereas the ordinary, which is coarser, is more efficacious. Try damping the print slightly, or else use a little cuttle fish bone mixed with pumice.

**J. E. ELLAM.**—The "outh" was a clerical error.

**C. G.**—Any view not including the sea would be considered "Inland Scenery."

**R. FENDLEBURY.**—Griffiths' Guinea detective hand-camera would suit you.

**KENSINGTON.**—(1) We should prefer over-development, and reduction and intensification are for the purpose of rectifying over and under development. (2) If you apply to any photographic dealer he would let you have the chemicals you require. (3) We should say under-exposure and under-development were the causes of your curious looking print. Try and intensify it, using mercury and ammonia, and then print under green glass on gelatino-chloride paper.

**H. I. C.**—You have been over-exposing so fearfully that you could expect nothing else but reversal of the image. You should have used a very slow plate, such as a chloride or lantern plate, or exposed the ordinary plate to a weak gaslight. Probably it would hardly be possible to give sufficiently short exposure by daylight to obtain a good transparency on an ordinary dry plate.

**PORTRAIT.**—(1) Probably from 5 to 10 minutes according to density and colour of negative. (2) You ought to be able to try the front lens on lantern with good results; if this will not work satisfactorily, then one of the combinations of the R.L., with a rather large stop.

**W. R. P.**—The cause of the halation is probably over-exposure and long development. The only thing to do is to back your plate, and then reduce your exposures. (2) The "Phoenix" or any ordinary dry plate is too rapid to give first-rate results in copying black and white subjects; Mawson's or England's photo-mechanical, or any slow bromide lantern plate is the best to use. (3) Provided your fixing bath has not been used for fixing iron-developed prints, there is no objection to your using the same for fixing plates; if, on the other hand, you use ferrous oxalate for the bromides, the chances are in favour of your having the plates, which we presume will be developed with pyro, stained.

**TE. WIRRMING.**—Judging from your print, there was slight vibration of the camera during exposure, so that there is a slight fuzziness, which is fatal to the success of your work. Is your objective corrected for photographic work?

**W. T. WARNE.**—The camera you name is, we think, not likely to get out of order with fair use.

**A. E. SMITH.**—We should choose the portable symmetrical of 4 in. focus. Mark your focussing screen with a 3½ square, and then be careful to make your picture fall within that. We do not know what lens was used by Mr. Lee. Always pleased to help you.

**HIBERNICUS.**—(1) If rebouched in the faces and the ugly marking on the right-hand side, this would be alright. (2) Negative wants intensifying, too flat and poor. (3) Print over-exposed. (4) Ditto. (5) Ditto. (6) Ditto. Very poor as a carbon print, as it is marked by curious streaks and markings. (7) Good. (8) Fair. Most of the prints give us the impression of being from weak hydroquinone-developed negatives.

**W. A. WATTS.**—Many thanks for article, which we shall use.

**BLANCHER.**—Use the spirit and glycerine with acid, but you must be careful not to use the ordinary methylated spirit, but try and get some of the old sort.

**FOLIAGE.**—Yes, the brown spots are silver stains.

**J. WATKINS.**—(1) Over-exposed and under-developed, too much foreground and too flat in composition. (2) Fearfully under-developed, and wants an inch off foreground. (3) Ditto. (4) Background too sharply in focus; decidedly better as regards development though.

**A. W.**—(1) The films are quite satisfactory in the large sizes. Mawson and Swan have a special slide made of Willoden paper. (2) The aluminium is practically one quarter the weight of brass, so that there is a great saving of weight, especially in the larger sizes; the only disadvantage is that the aluminium scratches easily. Beck and Gotz also offer it.

**W. HIGH.**—The exposure is alright, but you did not continue development long enough to obtain sufficient density. Intensify your negatives with mercury and ammonia. Always pleased to help you.

**OMEGA.**—(1) There should be no difficulty in dissolving the cadmium salt; you might, however, try heating carefully with some of the alcohol, or with an equal quantity of water, probably you did not powder it. Provided you do not use too much water, you can use it to dissolve the salt. (2) The preservative will not keep more than three days at the outside. (3) The set is for taking photographs of micro slides, and is a cheap and useful apparatus. (4) We should choose the Beck Autograph.

**O'N. F. KELLY.**—We certainly would suggest No. 1, after experience of both.

**J. PAIN.**—You give us no idea as to what you want in a hand-camera, films, magazines, or dark slides, nor as to price or size. Let us know these data, and we can then help you.

**IRIS.**—(1) The prints never were criticised, and no print reproduced. (2) You had probably over-exposed your plate considerably; ten minutes is about the average time for development.

**A. J. D.**—On adding ammonia drop by drop to the

chrome alum solution, you will see the solution become thick and muddy and look something like green milk; when, after shaking, the solution does not clear up, but keeps green in colour, and thick and muddy looking, then you can filter and use. Always pleased to help you.

**H. A. SALWAY.**—It is impossible to obtain a pure red chalk tone on any matt-surface paper, except by aid of the carbon process, the one always employed by professionals. It is possible, however, to obtain it or something like it by means of bromide paper and subsequent treatment. Would that suit you? If so, we would let you know formulae. The carbon process will give you the best results.

**P. D. BARNETT.**—(1) A stereoscopic camera is provided with two accurately paired lenses, has a dividing partition down the middle, and two pictures are taken on one plate, which usually measures 6½ by 3½. (2) The difference in results obtained has to be seen in the stereoscope to be appreciated. We have published several articles on this subject which would give you all information. (3) Two pictures obtained by one exposure. (4) See No. 2. (5) Almost any camera is suitable for home portraiture, and you must give us some idea of what price and what requirements you have in view before we can say which is the hand-camera most likely to suit you. We published some articles in vols. xii. and xiii. on Stereoscopic Photography, or W. J. Chadwick has a 1s. Handbook, which is worth reading.

**W. CLARKE.**—Was the print sent in to our No. 34 Competition? If not, we have no print from you.

**ASPINALL'S ENAMEL.**—This is perfectly harmless so far as the solutions go, but some of the solutions are not harmless as regards the enamel.

**LUX.**—Apply to Perken, Son and Rayment, or Wood and Co., 74, Cheapside, E.C., who will fit a lamp for you.

## Monthly Competition.

No. 34, PORTRAITURE AND FIGURE STUDY.

In addition to last week's list, printers have been received from—

|                            |                 |
|----------------------------|-----------------|
| G. F. Oliver .. .. .       | St. John's Wood |
| W. E. Wilson .. .. .       | Tonbridge Wells |
| J. Livingstones .. .. .    | Aberdeen        |
| Miss E. Annesley .. .. .   | France          |
| C. W. A. Rosser .. .. .    | Malta           |
| W. B. Pearce .. .. .       | Wednesbury      |
| Miss Hardman .. .. .       | Reigate         |
| G. W. Jenkins .. .. .      | Surrey          |
| B. Fuckle .. .. .          | London          |
| H. J. Fulljames .. .. .    | London          |
| Mrs. S. E. Gaddum .. .. .  | Cheshire        |
| Miss B. Atkinson .. .. .   | Durham          |
| W. F. Wratland .. .. .     | Rugby           |
| J. A. MacAdam .. .. .      | India           |
| C. S. Stone .. .. .        | Surrey          |
| G. F. Pirie .. .. .        | Elgin           |
| G. F. Sharland .. .. .     | Suffolk         |
| A. Spink .. .. .           | Notts.          |
| E. Delattotte .. .. .      | Surrey          |
| T. R. C. Roberts .. .. .   | Mon.            |
| S. Brook .. .. .           | York            |
| S. Armstrong .. .. .       | Surrey          |
| T. Clarke .. .. .          | Ilkley          |
| A. S. Dean .. .. .         | London          |
| W. E. Harman .. .. .       | Middlesex       |
| H. H. Cobb .. .. .         | Bradford        |
| H. S. Smith .. .. .        | Blackburn       |
| W. H. Bibby .. .. .        | London          |
| W. Clarke .. .. .          | London          |
| J. H. Thorne .. .. .       | Keighley        |
| E. Myers .. .. .           | Bristol         |
| R. D. Tucker .. .. .       | London          |
| E. Broughton .. .. .       | Windsor         |
| P. Brookebank .. .. .      | Hexham          |
| J. Gibson .. .. .          | Dorset          |
| Mrs. E. A. Perkins .. .. . | Berks           |
| F. C. Gibbons .. .. .      | Hastings        |
| J. Tully .. .. .           | Marlow          |
| S. W. Wright .. .. .       | Vienna          |
| W. W. T. Melhuish .. .. .  | Ireland         |
| E. Scott .. .. .           | Manchester      |
| R. Mercer .. .. .          | Salop           |
| W. Barkley .. .. .         | Ilkley          |
| H. Bottomley .. .. .       | Wavertree       |
| J. Smith .. .. .           | Edinburgh       |
| F. D. Todd .. .. .         | London          |
| E. H. Jeffrey .. .. .      | Leeds           |
| W. A. M. Brown .. .. .     | Dundee          |
| J. Dani .. .. .            | Lander          |
| Viset, Maitland .. .. .    | Cheltenham      |
| A. C. Nicholls .. .. .     | Birmingham      |
| H. Shimwell .. .. .        | London          |
| C. Tylee .. .. .           | Brighton        |
| A. H. Webbing .. .. .      | Rose Lane       |
| F. G. Banks .. .. .        | Norwich         |
| F. W. Spalding .. .. .     | Roehfield       |
| C. A. Timmins .. .. .      | Hove            |
| J. Williamson .. .. .      | Bristol         |
| C. A. Brightman .. .. .    | Cheshire        |
| B. Brandreth .. .. .       | Hornsey         |
| J. H. Thornton .. .. .     | Glasgow         |
| J. C. Oliver .. .. .       | London          |
| A. Ellis .. .. .           | Surrey          |
| E. P. Tipping .. .. .      | Dulwich         |
| J. C. H. Leicester .. .. . |                 |



|                  |        |
|------------------|--------|
| H. R. Wedmuller  | London |
| N. M. Hinselwood | London |
| E. A. Duff       | London |
| J. Bulbeck       | Havant |
| P. D. Barnett    | London |
| H. D. Colbourns  | London |
| E. M. Stone      | London |
| F. W. Meadway    | London |
| W. McEwan        | London |
| G. E. Bennett    | London |
| H. Burdwood      | London |
| C. F. Archer     | London |
| H. Struth        | Hull   |
| D. R. Williams   | London |

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word. Compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m. and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C.")

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Cameras, etc.**—Watson's 8½ by 6½ Premier camera, four double dark slides, turntable top, tripod stand in case, complete, in two waterproof cases, cost £18, price £12; approval on deposit.—No. 262, office of this paper, 1, Creed Lane, E.C.

7½ by 5 bellows-body camera, ewing back, drop shutter, sky shade, and six double dark slides, price £6; approval; deposit.—No. 263, office of this paper, 1, Creed Lane, E.C.

For sale, price 30s., Dale's Multiplex back (holds 13 plates) and quarter-plate camera, no lens, description in "Photographer's Handbook" list price, £4.—Doctor Gibbs, Chandos Road, Bristol.

Lancaster's stereo Instantograph (no lenses and stand), three double backs. What offers?—Vicar, St. Philip's, Southport.

Exchange 10 by 8 Kinnear camera, brass bound, double and single slides, for detective camera or 12 by 10 rapid rectilinear. Offers?—11, Waterloo Crescent, Dover.

Best London-made half-plate camera with three double-hinged backs, all movements, nearly new, price £3 10s.—F. Gibbons, 32A, Lee Terrace, Blackheath, London.

**Cameras, Lenses, etc.**—Hand or stand camera by Turnbull, rapid rectilinear lens, six double dark backs, instantaneous shutter, two finders, covered in leather, equal to new, £4.—Goddard, 73, Oval Road, Croydon.

**Enlarging Apparatus, etc.**—Lancaster's enlarging lantern, 5 in. condenser, cost 63s. a short time ago, will accept 45s.; approval; large print washer, cost 25s., price 7s. 6d.; view lens, 3s. 6d.—M. Newhouse, 90, Victoria Terrace, Lancaster.

**Hand-Cameras, etc.**—Talbot and Eamer's best hand-camera, cost £3 17s. 6d., Taylor and Hobson's 5 in. detective lens, cost £8 10s., both new, price 55s. 6d., 55s. respectively. Any evening, Fraser, 62, Kenwyn Road, Clapham, S.W.

Beck's £12 12s. quarter-plate hand-camera with umbrella tripod, £7 7s.—No. 265, office of this paper, 1, Creed Lane, E.C.

Wanted to dispose of, Kodak camera, size 2, equal

to new, charged 35 plates, cost £7, sell for 4 guineas.—Address, Miss H. Hewett, Bessie Villa, Brentwood.

The Rover quarter-plate hand-camera (Lancaster's), R.R. lens, iris diaphragms, leather case, equal new, price £3 10s.—J. E. Thornburn, Low Moor, Aspatia. Swinden and Earp's 5 by 4 hand-camera, leather covered, carrying 20 plates, specially fitted by Taylor, Taylor, and Hobson with their D lens, in capital condition, cost 11 guineas, price 7 guineas.—P., 32, Sydenham Avenue, Liverpool.

Swinden and Earp's 1892 prize medal hand-camera, quarter-plate, for 20 backed plates or sheaths, Wray's £3 5s. lens, 5½ focus, iris diaphragm; cost, with lens, sheaths, plate backer, etc., £10 middle last month; condition same as received, used only a few times, price £7.—Arthur, care of Eagles and Co., 1, Phillpot Lane, London, E.C.

Presto, new, with dark slide, screen, pneumatic release, splendid finder, 14s., free.—Letters, "Presto," 52, Greenhill Street, Manchester.

**Lantern**—Magic lantern with 4 in. or larger condensers, and complete outfit for limelight, very portable.—Crossley, Rodley, Leeds.

Helioscopic lantern with objective slide carrier, 4 in. condensers, 4-wick lamp, in polished wood case, by Walter Tyler, used twice only, cost £4 6s., price £3 3s.—Townsend, The Hollies, Berkswell, near Coventry.

**Lantern Slides.**—Several dozen photographic lantern slides of scenes in Ireland, Wales, and England, price 4s. per dozen.—J. P. Ratcliffe's, 32, Castle Street, Liverpool.

**Lenses, etc.**—10 by 8 Ross rapid symmetrical, £6; 8 by 5 Ross portable symmetrical, £3 5s.; Laverne's rapid portrait cabinet, 30s.—Alfred Dewey, Sidcup.

Lancaster's whole-plate instantaneous lens, iris diaphragm and shutter, cost 42s., for 32s. 6d.—Macmillan, Post Office, Rothesay, Bute.

Optimus 7 by 5 R.R. lens and Forrest's due ratio shutter with pneumatic release, only been used a few times, perfect condition, cost 65s., cash 45s.; approval.—P., 46, Green Street, South Shields.

Dallmeyer's 2B portrait lens, perfect condition, £6, or would take part exchange; wide-angle R.R. lens, half plate, first-class maker. Offers?—Morgan, 33, High Street, Normanton, Yorks.

New Instantograph lens and shutter, quarter-plate, iris diaphragms, splendid definition, 15s., cost 21s.—No. 266, office of this paper, 1, Creed Lane, London, E.C.

Ross's 8 by 5 R.S. with stops in case, £4 5s.; Dallmeyer's 8½ by 6½ patent R.R. with stops in case, £5 5s.; ditto, W.A.R., £4 5s.; both in perfect new condition; cabinet portrait lens by Cox, stops missing, 30s., bargain.—Stevens, 88, Balcombe Street, London, N.W.

Dallmeyer's patent stereo lens, cost £4 5s., for £2; ditto, 5 by 4 wide-angle landscape, cost £3 15s., for 35s.; Ross's portable symmetrical, 6 in. focus, cost £4, for £2 5s.; all as good as new.—D., 26, Calthorpe Street, Gray's Inn Road, London.

Ross's extra-rapid universal symmetrical, f/5.6, iris diaphragm, cost £5 10s., 6 in. focus.—No. 267, office of this paper, 1, Creed Lane, E.C.

**Negatives.**—Fifty quarter-plate instantaneous negatives, views of London, suitable for making lantern slides, price 1s. each; specimen negative and list, post free, 1s. 3d.—John Stabb, 154, Queen's Road, Bayswater.

**Roll-holder.**—Eastman's roll-holder for 24 exposures, whole-plate, new, leather and canvas case, £3, cost £5.—R., 36, Franconia Road, Clapham.

**Sets.**—Detective camera by R. and J. Beck, fitted with Eastman's quarter-plate size roll-holder, 7 in. rapid rectilinear lens, iris diaphragm, Newman's regulating instantaneous shutter, two finders, in perfect condition.—Apply, R. D. S., 36, Franconia Road, Clapham.

Rayment's camera, 5 by 4, six double backs, Optimus Euryscope lens, Kershaw's shutter, stand, cash, £7 10s.; also 5 by 4 Optimus W.A. symmetrical, 25s.; Lancaster's whole-plate rectilinear lens, iris diaphragm.—Mr. Cope, Croft House, Ashbourne Road, Derby.

Pumphrey's box camera, 5 by 4, excellent lens, tripod, changing slide, perfect working order, 21s.—Rev. Page, Torquay.

McKellen's 12 by 10 treble patent camera, three double slides, Wray's 12 by 10 R.R., Wray's 12 by 10 W.A., folding tripod, and canvas case, all in good condition.—E. G., The Hollies, Ashton-on-Mersey, Sale-Manchester.

Half-plate Instantograph set, complete, latest pattern, entirely new, and a splendid background, to be so cheap, or exchange for anything useful and partly cash. Call or write.—B. Dry, 22, Richmond Terrace, Clapham Road, Clapham.

First-class half-plate Optimus W.A. camera, with turntable, three double backs, leather case, three-fold tripod, perfect condition, £6 lowest.—Dudin, 4, Fenchurch Street, London.

Quarter Lancaster's International camera, lens, stand, shutter, three wood double backs, perfect, £2.—Thompson, 21, Hatherley Grove, Bayswater.

Very superior mahogany quarter-plate camera by the Helios Company, rising and sliding front, reversing double swing-back, square leather bellows, three double-hinged dark slides, 5 by 4 R.R. lens, in solid

leather lock-in case, quits new, cost £7, £3 10s.; approval with pleasure.—Stevens, 88, Balcombe Street, London, N.W.

**Shutter.**—Thornton-Pickard instantaneous shutter, half-plates, perfect order, price 10s. 6d.—J. Archer, 100, St. Paul's Road, Bow, E.

Thornton-Pickard shutter, time and instantaneous, also Sands and Hunter's, both whole-plate and good as new, price £2 10s. for both, or 20s. and 40s. separately.—Vesey, Draycott Place, Sloane Square.

**Sundries.**—Special 1892 half-plate patent Instantograph camera, complete, just new, lot of chemicals, burnisher, lamp, printing materials; no reasonable offer refused.—J. Bullock, Penn, Wolverhampton.

Camera, three half-plate lenses, three slides, six trays, tripod, background, and a quantity of sundries, quite new, £7 15s.—S., Devonshire House, Bath Terrace, Newington, S.E.

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Special rapid perfect 28 guinea Marlborough Club tricycle, direct steerer, all accessories, complete, sacrifice for £8; approval; also quantity photographic apparatus and appliances. No reasonable offer refused.—Address, Alfred D. Clarke, Filton, Rugby.

Whole-plate Instantograph lens and shutter (Lancaster's), 25s.; first-class whole-plate waterproof case, 7s. 6d.; three whole-plate Tyler's metal slides, focusing screen, and adapter for Instantograph, 12s. 6d.—H. W., 18, Paulin Street, Bermondsey, S.E.

Washer, rocker, plate box, 5 by 4 printing frames, bromide paper and self-adhesive mounts, case, cheap list.—S., 16, Palace Road, New Southgate.

## WANTED.

**Dark Slides.**—Three whole-plate, book pattern good, modern.—T. Howlett, Stanhope Road, Darlington.

**Exposure Meter, etc.**—Wanted, Watkins' meter and Lewis' rocker. Lowest price to H., 4, Vale Avenue, Tunbridge Wells.

Watkins' exposure meter, good lantern condensers, 4 in., 4½ in., or 5 in.—Ivy, Ormskirk.

**Hand-Cameras, etc.**—Wanted, Loman's Reflex, Swinden and Earp's, or the Stereoscopic twin-lens hand-cameras for cash, must be cheap.—Pratt, East Bridgford, Notts.

Wanted, for cash, Custworth's hand-camera, Repeater, in good working order; approval.—T. G., 77 Essex Road, Islington, London, N.

**Shutter, etc.**—1¼ in. Thornton-Pickard time and instantaneous shutter, good condition.—S., 148, Stanstead Road, Forest Hill.

**Sets.**—Wanted, Lancaster's half-plate Instanto set, or Extra Special, three double backs, or other good make.—Particulars to Amateur, 19, Lansdowne Road, Clapham, S.E.

**Stereoscopic Apparatus, etc.**—Stereoscopic camera, etc., wanted for cash, or will give Lancaster's quarter Instantograph outfit, new, and cash.—Davis, Briercliff Terrace, Kidderminster.

**Tripod, etc.**—Wanted, half-plate tripod, cheap, approval; also half-plate case.—Walls, 51, Castle Street, Kendal.

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# The AMATEUR PHOTOGRAPHER

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Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 392. Vol. XV.]

FRIDAY, APRIL 8, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare*.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—Easter Week Arrangements—1891 Prize Slides—The Photographic Convention—The April *Photographic Quarterly*—The Lay Press—New Society in Manchester.

LEADER.—Notes on Enlarging.

LETTERS.—The Actinograph (Noverre)—New Washer (Sharland)—"Tips Economical" (B.)—Wanted, A New Club (J. G. P.)

ARTICLES.—Photographic Procedure (Wall)—Elementary Photography (Hodges)—Instantaneous Photography (Harrison)—Photographing on Wood for Engraving Purposes (Rawlings)—Lantern Slides by Reduction by Artificial Light (Misselbrook)—The Biophantoscope.

SOCIETIES' MEETINGS.—Aberdeenshire—Barrow-in-Furness—Bedford—Blackheath—Cleveland—Cornish Camera Club—Croydon—Glasgow—Harrington—Holborn—Huddersfield—Leigh—Leith—Leytonstone—Lincoln—Liverpool—Midland—Polytechnic—Pudsey and District—Richmond—Rochdale—Sydenham.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

### TERMS OF SUBSCRIPTION—

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TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE and EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE and EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

"Amateur Photographer" Monthly Competition No. 35—  
"INLAND SCENERY, WITH OR WITHOUT FIGURES." Latest day, April 25th.—Prizes: Silver and Bronze Medal, with Ribbon and Clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, May 13th.)

CORRESPONDENTS and readers are requested to note that in consequence of the Easter week all communications, etc., for next week's paper must reach us not later than by the midday post on Tuesday, the 12th inst.

We regret to say that we have received information that our 1891 Prize Slides are in a sad state of disorder and confusion. This is, we think, unnecessary, as any competent lantern operator should be able to replace the slides in correct order, and certainly less than half an hour after the exhibition will suffice to place the slides in their respective grooves. We should be much obliged if the Secretary of any society, who may receive them early enough, would kindly devote a little time to setting them in order.

MR. F. P. CEMBRANO, jun., the Hon. Secretary of the Photographic Convention, informs us that the Convention will meet this year at Edinburgh during the week beginning on the 11th July. The hall of the Geographical Society, in the National Portrait Gallery, has been secured for the meetings and exhibition. Several valuable papers have been promised, and the local Committee are making arrangements for excursions to some of the most picturesque spots of Scotland. The subscription, which is now due, is only 5s. per annum. It is a far cry to Edinburgh, but, doubtless, there are many of our N.B. readers who will support the Convention this year.

THE April *Photographic Quarterly*, published last week, contains as a frontispiece "Dunster Mill," from a negative by Mr. John A. Hodges, a very fine specimen of Woodbury gravure by Messrs. Waterlow and Sons. The articles include "Nature's Light Scales as Rendered by Photography," by H. Dennis Taylor; "Negatives, and some Suggestions upon their After-Treatment," by John A. Hodges; "Is a Theory of Pictorial Art Possible?" by Rev. F. C. Lambert, M.A.; "Among the Towers of Somerset," by Rev. T. Perkins, M.A.; "The Photographic Work of Robert Hunt," by W. Lang, jun., F.C.S.; "Warm Tones on Bromide Paper," by E. J. Wall, and the usual summary. There are nine illustrations, besides the frontispiece. In the paper on "Warm Tones on Bromide Paper" a novel suggestion is made for this purpose which may be found useful, and Mr. Hodges' paper is well worth reading from its sound practical advice.

We often note the curious statements made by the lay press on technical subjects, and the following paragraph



emanating from the *Freeman's Journal*, Dublin, is amusing in the face of the fact that Mrs. Cameron's pictures were "fuzzy," or impressionistic, merely from the use of an inferior lens; and we were always under the impression that Mrs. Cameron worked many years ago. Although our ideas may be fuzzy on this point, it can hardly be said she was the founder of the new school.

"The wonderful advances recently made in photography point to a considerable future for the art. The only problem, we believe, that practically remains unconquered is the reproduction of colours, and even towards this end some progress has been made. Time has been already subdued, it now requiring only the 1-500th part of a second to secure a sharply-defined picture, and every form of retouching and printing has well-nigh reached perfection. To Mrs. Margaret Cameron belongs the merit of inaugurating a novelty in the art that bids fair to become the fashion. Strangely enough, its success is a direct violation of the very aims the photograph is intended to subserve. The enterprising and successful lady amateur we have just mentioned succeeds by throwing her lens slightly out of focus in obtaining a picture that has some of the softness and mystery of 'impressionist' work. The result, we learn, is most effective, and blurred outlines and hazy forms are now all the thing in artistic photography. At an exhibition of the work of British photographers, held in Brussels on Saturday, and in which King Leopold took the warmest interest, the pictures of Mrs. Cameron and her school came in for the warmest praise."

WE note that a new society has just been formed in Manchester, called the South Manchester Photographic and Lantern Society. The full report of the first meeting, with the address of Mr. W. I. Chadwick, will be found on another page.

NEXT Saturday, the 9th, is, as most of our readers know, the occasion of what has become almost a national sight, viz., the University Boat Race. Fortunately for all, amateur photographers included, the race will be rowed near midday, and given such lovely weather as has been current these last few days, we ought to get some good results. Even during the days of practice, we believe that many shots have been taken. At least, when on the tow path the other day, we saw no less than seven hand-cameras and two tripod men besides our own. We managed to get a very good shot at one of the boats, and the resulting print does not say much for the form shown by this crew in particular, "the time" as shown by the print being very poor indeed.

DOUBTLESS many of our readers will have a shot at the race. We shall be glad to see any results, and will, if possible, reproduce them. We have had several inquiries as to the correct speed of shutter, plates, etc., from those anxious to turn out first-class work.

THE travels of a paragraph in photographic literature is sometimes very curious. Thus a small note was read by a German amateur at a meeting in Berlin in November, 1889. This was translated into English and appeared in an English monthly magazine, thence it crossed the Atlantic and appeared in the United States and simultaneously in Canada. The original translator gave credit to the proposer, and this was also done across the water. But, however, it appears in May, 1890, in an English weekly as something novel, and no acknowledgment made. From England it travels to the land of its birth, appearing in Germany, thence to France, thence to England. From England it appears in a Swiss paper, where it is generally dissected and enlarged, and now finally appears in our English contemporaries again. Possibly we shall see it yet again, until it becomes too well known to be cut out. This is an interesting little study of travel, and the point of it all is that the process suggested is utterly valueless.

## NOTES ON ENLARGING.—IV.

### APPARATUS FOR ENLARGING BY ARTIFICIAL LIGHT.

The apparatus for enlarging by artificial light bears some resemblance to the ordinary or so-called magic lantern.

It is immaterial of what nature or substance the body of the lantern is, provided it be light-tight and strong. Russian or sheet-iron, copper, or wood with metal lining—all are used by commercial firms. The enlarging apparatus practically consists of a camera attached to an optical lantern, focussing being effected by rack and pinion. We need make no further mention of these, except that we shall later give a sketch showing how an ordinary magic-lantern may be adapted for enlarging.

### THE CONDENSERS.

The function of the condenser is to collect the rays of light and refract them through the negative. Fig. 5 shows the course of the rays of light from a radiant point, R, through the negative, P, and the objective, O, when a condenser is not used; and fig. 6 shows the action of the condenser C in refracting the rays, which would otherwise be lost,

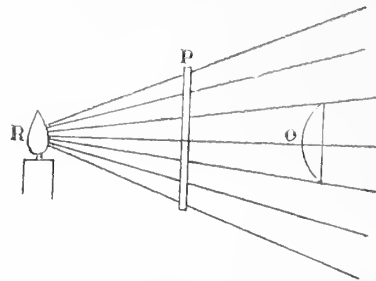


FIG. 5.

as shown by the dotted lines.

The usual form of condenser employed is two plano-convex lenses placed side by side, with the convex surfaces nearly touching.

The first question to decide in purchasing an enlarging lantern is, What size condensers are required? as the size of the condensers governs the price. It is a question which has often been asked by beginners as to what size condenser will cover a certain-sized plate. This is by no means difficult to decide. All that it is requisite to do is to measure the diagonal of the negative in question, and this diagonal will be the diameter of the required condenser.

In practice it is always advisable to allow an extra quarter or half an inch where this does not add too much

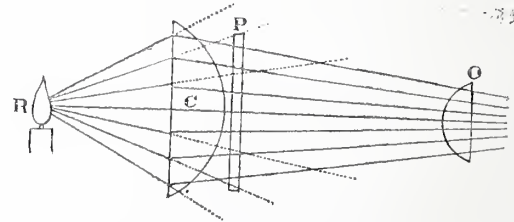


FIG. 6.

to the cost. Mr. Hughes has introduced a rectangular condenser. In selecting condensers, the most important points to note are, first, to see that they are as free as possible from colour; secondly, that the one next the negative is free from air-bubbles and striæ; thirdly, that they are not set too tightly in their mounting, or when heated from the light they will crack.

Several minor points will be treated of as they occur in the following chapter of focussing and exposing, but our next consideration is—

### ENLARGING BY ARTIFICIAL LIGHT WITHOUT CONDENSERS.

This is a procedure which will commend itself to many an operator, because the necessary apparatus may, in many



cases, be knocked up from odds and ends in odds and ends of spare time. Thus we utilised an old square sugar case which cost 4d., and the sheet-tin to line it 9d., the lamp 15s., odds and ends, such as screws, ground flashed opal glass, another 2s.; so that for 18s. an enlarging apparatus was obtained which worked well for over two years, and was then sold to a friend for 12s. Fig. 7 is a diagram and description of the apparatus as it appeared in the first edition of Wall's "Dictionary of Photography."

"The arrangement was suggested by Major Barrington Baker in the *British Journal of Photography* for 1888. . . . The case is made of half-inch deal with a hole N  $6\frac{1}{4}$  by  $4\frac{1}{4}$

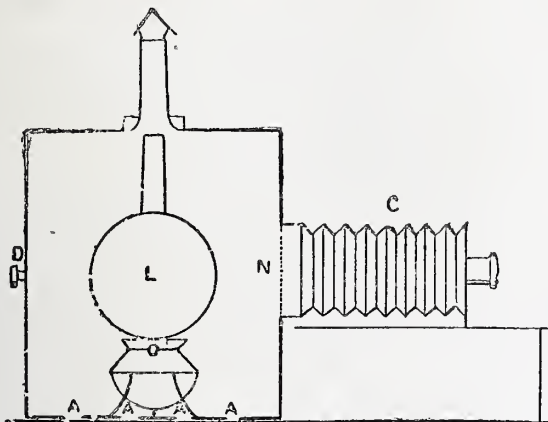


Fig. 7.

for negative, or the size desired. L, a Belgo lamp of 42-candle power, is placed in the case through the door N, half-a-dozen holes (A) being bored in the bottom of the box for ventilation. An opal globe is used to diffuse the light. The negative is placed film side outwards in a rebate at N, and held in its place by two small turn buckles; the camera may be used or a specially made pair of bellows. The exposure is, of course, prolonged, with rapid papers being from ten to fifteen minutes. The author would suggest, as an improvement upon this, that the case be lined throughout with tin, and a sheet of ground glass or opal be placed before the negative, and that a parabolic reflector be used. Some of the modern cameras will be found utterly useless

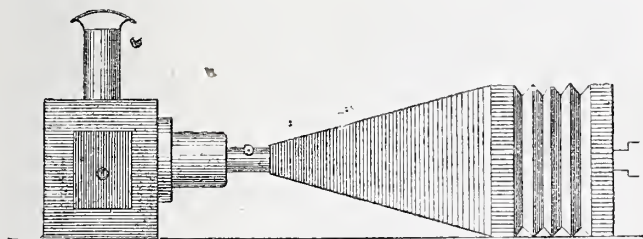


Fig. 8.

for enlarging, the pull of the bellows or the greatest distance they will stretch being very short. Then the following arrangement will take their place:—Obtain some black twill, one yard in width and length, and cut into four pieces in the following manner (it is better to cut a paper pattern first, in case of error): Fold the cloth in half, and again in half, so as to give four pieces nine inches wide and thirty-six inches long. Now cut two slanting strips from each, commencing at two inches wide, and narrowing down to the other end. This will give four pieces of cloth thirty-six inches long, nine inches wide at one end, and narrowing to five inches at the other. Have these sewed together by

the edges so as to form a conical sleeve, which will take the place of bellows thirty-six inches long. At the wide end nail a frame of wood large enough to take the negative, and at the narrow end a piece of wood to take the lens, or the camera front may be utilised for this purpose. It will not be necessary to pleat it like bellows, but it can be finely pleated at intervals, and safety pins used to hold the pleats together when required to shorten the distance, so the pleats can be easily let out when required, or pieces of elastic can be run along the edges to serve the same purpose."

The possessor of a magic lantern can easily utilise that, no matter what size the condenser, if a sleeve of black cloth is made to fasten at one end round the lantern objective and at the other to the camera, the negative being placed in the position of the focussing glass of the camera.

Where the operator can utilise gas or several oil-lamps it is only necessary to place between them and the negative a sheet of flashed opal glass ground on the flashed side, or a piece of ground glass coated on the ground side with an emulsion of sulphate of baryta in gelatine or of finely sifted carbonate of lead. When using an ordinary lantern it is absolutely necessary that no stray light should find its way out of the same; therefore it is nearly always necessary to enclose the same in an outer box. This is a point which requires careful attention, or foggy, degraded whites will ensue in the resulting enlargement.



"The Life and Work of Mr. H. P. Robinson."—Under this title Mr. C. W. Hastings will deliver a lecture before the Tunbridge Wells A. F. A. on 13th inst., illustrated by eighty-five lantern slides from Mr. Robinson's well-known pictures. Instrumental music will be given at intervals.

**Photography as Applied to the Investigation of Electrical Phenomena.**—An interesting paper on this subject was recently read by Mr. C. Kammeyer before the Chicago Electric Club. A great deal has been done towards utilising photography for the purpose of investigating obscure transient phenomena, a result rendered possible by the marvellous degree of sensitiveness which photographic plates can be made to possess. Although, however, much has been done, it is doubtful if the value of the power of analysis which photography gives is yet fully appreciated; it is interesting, therefore, to note any new application of the means of investigation. Mr. Kammeyer's experiments have had for their object the arriving at correct conclusions regarding the behaviour of different fuse metals while in the act of melting or exploding under the action of a current. Mr. Cockburn, it will be remembered, a year or two ago, made a series of experiments which resulted in the adoption of his well known and much used weighted fuse. Some interesting experiments were shown at a paper read by him before the Institution of Electrical Engineers, and Mr. Kammeyer's results form a valuable and most interesting supplement to the same. In carrying out the experiments the terminals of the fuse were arranged on a dark background and properly focussed in the camera; the sensitive plate being exposed, the fuse was allowed to "blow." One conclusion arrived at from the observations thus made was that the closer the safe carrying capacity of a fuse is kept to its actual fusing point, the less danger we have from permanent short circuits or arcs being established by a blowing fuse. Another point brought out was the unreliability of fuse connections when made by a screw and washer, the cross section of the fuse being reduced at that point, with the result that the rupture takes place at the weakest point. In an experiment made with two fuses in series, it was shown that the two did not "blow" in a similar manner, a result due to the want of homogeneity in wire cut from the same spool, a difficulty which is continually experienced. A remarkable fact came out in the course of the experiments, viz., that an alternating current caused a fuse to blow in a less "vicious" manner than the continuous current, i.e., there was less dispersion. Mr. Kammeyer considers that his experiments prove that the use of covered fuse blocks is to be avoided as much as possible, as the metal in its gaseous state, unless carried off very rapidly, must certainly form a destructive arc between the fuse supports, and if any inflammable matter be near, the inevitable result must follow. Moreover, it is suggested that a fuse blowing in a vicious manner may set fire to dust or other inflammable materials that are apt to collect in flour and saw mills.



## Letters to the Editor.

### THE ACTINOGRAPH.

SIR,—In your issue of February 12th, a letter of mine appeared suggesting certain objections to the instrument described by Messrs. Hurter and Driffield in your issues of January 29th and February 5th, and named by them the "Actinograph." The writers of this communication made no mention of any difficulty as likely to arise in using the instrument, and in the course of their description, made the following statement:—"If, therefore, the photographer is provided with plates so marked, and with the Actinograph, he is in a position to time his exposures with a degree of accuracy almost amounting to certainty." The following are the objections raised in my letter referred to above. First, that "a mistake might arise in estimating the value of the light—dull, very dull, etc. Secondly, that "if an exposure is required for a different kind of subject from an ordinary landscape, the photographer must rely on his own judgment, as the instrument apparently fails to assist him."

Messrs. Marion and Co. wrote to me on March 14th kindly offering to lend me an Actinograph, and expressing the hope that a trial of the instrument would remove my objections regarding it. The instrument was received in due course, and also a parcel of plates.

After this, in your paper of March 22nd, a reply appeared from Messrs. Hurter and Driffield to my letter of February 8th. Regarding the first objection made by me, Messrs. Hurter and Driffield admit that some difficulty may exist, and remark that "a little experience will greatly help in this." I agree that with a little experience, and under ordinary circumstances, no great difficulty could be felt—still, circumstances will occur to most photographers in which mistakes might be made. Suppose, for instance, the case of a portrait or group in the shade out of doors. It often happens that a much stronger light is reflected by the clouds than by a clear blue sky, with the sun shining brightly; yet the Actinograph would indicate a shorter exposure for the latter condition than for the former. Again, in certain conditions of the atmosphere, the light is constantly changing, and with light clouds passing rapidly over the sun the strength of the light varies every second. Now, where such elements of uncertainty exist, "surely," to repeat the expression used in my letter, "a mistake may easily be made."

Of my second objection, Messrs. Hurter and Driffield take no notice in their reply, although it is by far the more important of the two.

The Actinograph may be described as an arrangement of adjustable scales for calculating under all likely conditions the exposure, *not of the subject to be photographed*, but of an imaginary subject, referred to by the inventors as an "ordinary landscape," and defined by them to signify "a landscape in which there is no dark or massive object in the foreground."

Every photographer is aware that certain points have to be considered before an exposure can be ascertained. These are (1) the lens and its aperture in relation to its focal length, (2) the speed of the plate, (3) the actinic power of the light for the time of the day and the time of year, irrespective of atmospheric influences, (4) the atmospheric condition as to clouds, mist, etc., (5) the value of the light proceeding from the objects to be photographed, depending partly on their colour and partly on the extent of their illumination. The first three points it is possible to ascertain with certainty; as to the fourth, some doubt may exist, as noticed above. The fifth point, which is the subject of my original objection, is very uncertain. It is to some extent provided for by the table of factors which will be noticed further on, but the instrument itself does not deal with it in any way, as the following instances show. Suppose the case of a heavy foliage subject or a badly lighted interior, we find by the Actinograph that the exposure for the standard subject (an ordinary landscape) at the time is one second; we will suppose that the correct exposure for the former subject is sixty seconds, and for the latter ten minutes, the proper factors here would be 60 and 600 respectively. If we could obtain the factors correctly, we could tell by means of the instrument what the exposures should be, but towards obtaining these factors the instrument gives us no assistance whatever. Hence I fail to see how the Actinograph enables the photographer to time his exposures "with a degree of accuracy almost amounting to certainty," as claimed by Messrs. Hurter and Driffield.

In order to assist in determining the exposure for the subject to be photographed, there is supplied with the instrument the following table of factors, and the operator is directed to multiply or divide, as the case may be, by one of these factors, the exposure recorded by the instrument for the standard subject:—

TABLE OF FACTORS.

| VIEWS.                                                             |            |
|--------------------------------------------------------------------|------------|
| Ordinary landscape ... ..                                          | 1          |
| Heavy foreground or close object... ..                             | 2 to 3     |
| Distant landscape ... ..                                           | 1/2 to 1/5 |
| Clouds ... ..                                                      | 1/10       |
| PORTRAITURE.                                                       |            |
| In diffused light, out of doors ... ..                             | 5 to 10    |
| In sitting room ... ..                                             | 120 to 200 |
| In studio ... ..                                                   | about 50   |
| INTERIORS.                                                         |            |
| Fairly lighted ... ..                                              | about 300  |
| COPYING.                                                           |            |
| Photograph, same size, in diffused light out of doors ... ..       | 7          |
| (Or say half as much again as portrait under same conditions.)     |            |
| Black lines on white paper, in diffused light, out of doors ... .. | 1/4        |
| (Or 1-20th exposure for portrait under same conditions.)           |            |

There are two objections to this table. First, it does not nearly meet all the cases that are likely to occur, foliage subjects and dark interiors, for instance, being altogether omitted. Referring to my note-book, I find that my exposures for outdoor subjects in summer have varied from one-fiftieth of a second to three minutes, or, taking the exposures as made with the same stop and plate and other conditions similar, from one second to three minutes, and for interiors I find the variations to range from two to forty-five minutes. To cover all the exposures noted, some twenty factors would be required, or four times the number given in the tables for these subjects. Secondly, there is the difficulty which one photographer finds in recognising a subject as described by another. This is one of the reasons why exposure tables are found so unreliable. The difficulty was felt in my first trial with the Actinograph. I found what that seemed to be an ordinary landscape, according to my interpretation of Messrs. Hurter and Driffield's definition, required less than half the exposure that was indicated by the instrument. Again, in taking an interior, a mistake was made in the exposure, owing to the difficulty of estimating what was meant by the words, "a fairly lighted interior." This difficulty was enhanced by the fact that the sun was shining at the time, and it was necessary to exclude this fact from consideration, because of its being already provided for by the Actinograph in the exposure indicated for the standard subject.

Messrs. Hurter and Driffield's plan of numbering the plates according to their speed, dividing the light into certain parts and enabling the photographer, somewhat after the plan adopted in Watkins' actinometer, to arrange all his available data on the instrument, so that the exposure for a standard subject may be ascertained for any day of the year and any hour of the day, is excellent, and photographers will find the instrument useful in many respects; but Messrs. Hurter and Driffield are hardly correct in stating, as they do in their letter of March 21st, "We do hold, however, that the Actinograph extends to the user an amount of assistance in the exercise of his judgment which has hitherto been unattainable," because anyone can calculate for himself from tables\* already published, the data given by the Actinograph, although the instrument affords the assistance in a more convenient way by saving the user the trouble of calculation. He has merely to adjust the three scales of the instrument when, provided his estimate of the light has been correct, he can at once read off the correct exposure for the subject.—I am, etc.,

W. L. NOVERRE (Colonel).

Brighton, April 2nd, 1892.

\* \* \* \*

### NEW WASHER.

SIR,—In reference to the new washer, as described by "The Smith" in last week's AMATEUR PHOTOGRAPHER, I beg to say

\* I find I made a mistake in my letter of February 12th, in supposing that the compilation of a table showing the variations for exposures throughout the year was due to Messrs. Hurter and Driffield, as a table of this description was published as far back as 1887.



that I have had a similar washer in operation ever since I started the art-science, now some three years ago; only, instead of using rubber tube for the overflow, etc., I use a piece of lead pipe, fitted into a cork (in place of the usual brass plug), and the holes for carrying off the hypo-laden water are level with the bottom of basin, which I think is a better arrangement than having them half an inch above.

I frequently wash half a dozen plates, film downwards, with this arrangement, and find it most convenient, both for the plates and prints; and, as "The Smith" remarks, "the water may safely be left slowly running for a whole night without fear of finding the house minus a ceiling in the morning."—Yours truly,

RICH. WM. SHARLAND.

#### \* \* \* \* \*

#### "TIPS ECONOMICAL."

SIR,—In the above article in last week's issue, mention is made of cutting off bottles at the shoulders. Perhaps Mr. Masse would say how this is done without a diamond. I know there is a method, but what it is I cannot remember.—I am, etc., B.

\* \* \* \* \*

#### WANTED—A NEW CLUB.

SIR,—I venture to suggest that there is room for another photographic club in London, founded on somewhat new lines, and shall be glad if you will allow me to feel the pulse of your readers through your columns.

We have, it is true, the Camera Club, which is, however, I venture to think, hardly what it should be, and numerous suburban societies and associations; but what we want is some central rendezvous, where meetings could be held and where provincial amateurs could come when in town, or from which provincial societies should derive some benefit.

I briefly formulate some of my ideas:—

1. The formation of a central body with permanent headquarters, where there should be a commodious lecture or meeting room with a permanent dark-room.
2. The formation of a library for reference and the loan of books.
3. The establishment of a laboratory fitted with instruments at present beyond the reach of the every-day amateur.
4. The initiation of elementary classes for beginners.
5. That any amateur, professional, or manufacturer should be eligible for membership.
6. That the subscription should be limited to one or two guineas per annum, and an entrance fee for town members, but no entrance fee for country members.
7. That a bi-monthly journal should be circulated, and sent post free to all members.

These are my rough ideas, and if your readers think it worth supporting, perhaps, Sir, you would assist us.—Yours truly, J. G. P.



**Photographic Society of Great Britain.**—Affiliation meeting of delegates, March 21st, W. Bedford in the chair. Present: W. Bedford, P.S.G.B.; A. Mackie, North London P.S.; J. J. Thornton, Southsea A.P.S.; A. J. Golding, Holborn C.C.; P. Everitt, London and Provincial P.A.; C. H. Desch, Finsbury Technical College P.S.; E. W. Parfitt, North London P.S.; S. Hodson, North Kent P.S.; F. W. Pask, London and Provincial P.A.; J. W. Marchant and F. W. Cox, North Middlesex P.S.; W. White and A. F. Taylor, Ealing P.S.; Robert Steele, Leeds P.S.; F. P. Cembrano, jun., Richmond C.C.; T. A. Pope, P.S. of India; C. C. H. D'Aeth, Dorset A.P.A.; G. L. Addenbrooke, P.S.G.B. The minutes of the previous meeting were read and confirmed. The Chairman announced that, by permission of the President of this society, Dr. Jeserich's paper had been put in circulation, but the subject of circulating advance proofs of papers was in the consideration of the Council. The Assistant Secretary read the letters received in reply to the letter he was instructed to issue to the secretaries of affiliated societies. Mr. Addenbrooke explained the decision of the Council as to the funds that were to be placed at the disposal of the delegates. After considerable discussion, Mr. P. Everitt moved that the Council be invited to confirm their resolution as applying to the current year only. Mr. R. Steele seconded this motion, which was carried. The advisability of appointing an Executive was then considered, and it was finally decided not to appoint an Executive, but to delegate the work to Sub-Committees. Mr. Everitt inquired whether there was any prospect of special lectures being given, when a long discussion ensued, but nothing was decided upon. Finally Mr. Cox moved that a London Sub-Committee be appointed to carry on the work till the next meeting of delegates. This was seconded by Mr. Steele, and it was decided that the existing Committee consisting of Messrs E. Clifton, P. Everitt, A. Mackie, and T. A. Pope should form the Committee. Mr. Addenbrooke moved the addition of Mr. Bedford; this was seconded by Mr. Mackie and carried.

## Photographic Procedure.

By E. J. WALL,

Author of the "Dictionary of Photography."

### SECTION V.

#### THE SENSITIVE MEDIUM AND ITS SUPPORT.

VERY rapid plates are not easy to make, but in order to complete this note we may briefly indicate how to prepare the same. The formula for the emulsion may be precisely the same as that given last week, p. 265; but the iodide should be the full quantity of 8 parts, and the bromized gelatine be heated to 60 deg. F. (= 140 deg. F.), and the silver solution added to it, and after about forty to fifty minutes' digestion, in the water bath, at a temperature of 40 deg. C. (= 104 deg. F.), a sensitiveness equal to about 23 deg. W. will easily be obtained.

When making such an emulsion, it is advisable to cool rapidly and wash rather quickly, as the digestion at such high temperatures has a tendency to give rise to frilling and blisters. Some manufacturers use chrome alum to prevent this frilling, and it is possibly due to this that some commercial plates require so long to develop and fix—not always a desirable feature. Chrome alum too is always faintly acid, and tends therefore to the lowering of the sensitiveness; this, however, may be avoided, I think, by neutralising it by the cautious addition of liq. ammonia, and, so far as I have been able to determine, this in no way affects the hardening action of the alum on the gelatine. On the other hand, if the chrome alum solution be rendered more than very faintly alkaline, there seems to be a greater tendency to fog. Practically, an addition of 20 parts of a 2 per cent. solution of chrome alum to every 1,000 parts of emulsion will not be amiss, and it is advisable, if it is desired that the plates should keep long, to make an addition of 15 to 20 parts of a 1 per cent. solution of potassium bromide to every 1,000 parts of emulsion; these additions must be made immediately before coating.

*The Acid Boiling Process.*—The disadvantage of not being able to obtain such a high sensitiveness, nor such great regularity as with the ammonia process, rather places this *hors de combat*, one well-known writer even going so far as to say that it is impossible to obtain good plates by this process, possibly the best answer to that is, that it is used by a well-known firm of plate makers to prepare excellent plates.

The following\* is the process, devised by Mr. Wilson, which won a prize offered by Mr. Paget in 1880.

To make a pint of emulsion—

Select a 20-ounce narrow-mouth stoppered bottle, with a well-fitting stopper and thin bottom. Make it perfectly clean.

Make a stock solution of—

|                              |                |
|------------------------------|----------------|
| Hydrochloric acid (pure) ... | 1 fluid drachm |
| Distilled water ...          | 12½ ounces     |

Put into the 20-ounce bottle—

|                                           |
|-------------------------------------------|
| 20 minims of the above dilute acid.       |
| 3 fluid ounces distilled water.           |
| 210 grains ammonium bromide.              |
| 80 grains Nelson's No. 1 photo. gelatine. |

Leave the gelatine to swell for (say) fifteen minutes or longer.

*The Addition of a Trace of Hydrochloric Acid* to the soluble bromide and gelatine is recommended in the formula given, for the following reasons:—If the soluble bromide be absolutely neutral, and the gelatine a suitable sample, the hydrochloric acid is *not necessary*, and better omitted. If, however, the gelatine be ever so little alkaline, or even apparently neutral, but yet does not give a clear solution, acid is required. Its use is not to produce silver chloride, but to ensure a fine precipitate of silver bromide. According to Mr. Wilson's experience, a fine precipitate is hardly at all a question of the method of mixing, and elaborate contrivances for the purpose he considers as quite unnecessary. A fine precipitate is easily obtained, however rapidly the solutions be mixed, if two conditions exist, viz., if the bromized gelatine solution contain a trace of hydrochloric acid, and the silver solution be not stronger

\* Abney, "Photography with Emulsions," p. 84.



than 110 grains per ounce. If it be 50 to 60 grains per ounce, it may be poured in all at once; or if a little weak solution be first poured in, the stronger may follow (as per formula). A good test for the suitability of a gelatine is to see if a fine precipitate can be obtained without having to add hydrochloric acid. Too much hydrochloric acid retards or prevents the conversion of the silver bromide into the sensitive form in cooking; a large excess destroys the gelatine.

It will thus be seen that the addition of hydrochloric acid must be made *intelligently*, according to the other materials accessible.

It might be supposed that any acid would make the precipitate fine, and that, therefore, acid ammonium bromide would be good. Such is not the case, and, moreover, the acid bromide has in some way a powerful effect in retarding the conversion of the silver bromide into the sensitive form.

*Ammonium Bromide* should be as nearly as possible *neutral*. It is usually more or less acid, even though otherwise pure, and frequently becomes strongly acid by keeping. It is then quite unfit for use, and will not give good results unless almost neutral.

Since sending in the formula for competition, Mr. Wilson has arrived at the conclusion that, on the whole, it is better to use bromide of potassium. The latter is often alkaline, but may, without much difficulty, be obtained neutral, and is free from tendency to alter.

*Silver Nitrate* is usually—if good—slightly acid with excess of nitric acid. It may be so used; but it was recently found that better results are obtained if the silver solution be neutralized with carbonate of soda. A slight excess does no harm, as the resulting trace of carbonate of silver is converted into bromide; indeed, emulsion may be made by mixing washed carbonate of silver with a soluble bromide.

The uses of neutralizing the silver are twofold. One is, that as the amount of acidity of silver nitrate varies with different samples, it ensures the same conditions in all cases; the other is, that the presence of nitric acid in an emulsion produces a tendency to green and pink discolourations in the finished negative.

In a clean glass vessel (beaker, measure, or flask) dissolve 330 grains nitrate of silver (re-crystallized) in 3 oz. distilled water.

Pour out about 2 fluid drachms of this silver solution into another small vessel (say test tube), and dilute it to half strength with an equal quantity of distilled water.

Take the 20-ounce bottle and the two lots of silver solution into the dark-room. Mr. Wilson prefers to use a large paraffin lamp, protected by one thickness of ruby and one of dark orange glass, to two thicknesses of dark orange paper without any ruby.

In the dark-room have a gas-boiling stove, and on it a tin pot or saucepan deep enough to contain the bottle when the lid is on. It should have a tin perforated false bottom, to prevent the bottle resting immediately on the true bottom; or a piece of wire gauze will answer. Let the pot contain some three or four inches in depth of *boiling* water.

Turn out the gas of the stove, if alight, and plunge the bottle into the water two or three times, so as to avoid cracking it by too sudden heating; then leave it in for a few minutes until gelatine is completely dissolved. *Do not* leave it in longer than necessary for complete solution. Take it out, shake up, remove the stopper, and set bottle down on table near your lamp, so that you can see what you are doing.

Pour in *all at once* the four drachms of *dilute* silver solution. Put in the stopper and shake up thoroughly, but not too violently, for about half a minute. Now pour in the strong silver solution in quantities of about half-an-ounce at a time, shaking as before after each addition, and, when all is added, give a final thorough shaking for (say) a couple of minutes.

*If the instructions have been so far accurately followed, there will be no coarse precipitate or grit in the finished emulsion.*

Now put the bottle into the pot of hot water, see that the stopper is not jammed in, and put on the lid. Light the gas, and boil up as quickly as possible. If the water was previously boiling, and the gas only turned out for the mixing operation, it should boil up in less than five minutes; then keep boiling for *fifty-five minutes*. At the end of this time turn out the gas, take off the lid, take out the bottle, and remove the stopper *at once*, or you will not get it out afterwards. The bottle must now be cooled down as quickly as is consistent with safety to the glass. In very cold weather it may stand on the table for ten minutes or so, and then be cooled with water; or in any weather, place it in a pan of nearly boiling water, and cool gradually by allowing cold water to trickle slowly in, shaking the bottle occasionally. Whatever method is adopted, it should be down to 90 deg. F., or lower, in fifteen or twenty minutes at most. It cannot easily be made *too cold*, as the gelatine has lost its power of setting.

In a glass beaker (about 12 or 14 oz. size) put 1 ounce of Nelson's No. 1 Photographic or "X opaque" gelatine, and pour over it 10 ounces of clean ordinary water. Leave it to soak until the gela-

tine has absorbed 4 ounces of water, pour off the surplus 6 ounces, melt the swelled gelatine by immersing the beaker in hot water, and pour it into the 20 ounce bottle containing the cooled emulsion. Shake up well, and pour all back into the beaker, draining out the bottle thoroughly. Leave it to set in a cool place. Mr. Wilson prefers to leave it for twenty-four hours. It has next to be washed.

The *addition of the gelatine* after boiling should be made when the boiled emulsion and dissolved gelatine are *both* at as low temperature as possible, and between the time of this addition and that of washing the emulsion, it should be kept as cold as possible. The reason of this appears to be that the excess of alkaline bromide has a most destructive effect on the new gelatine, and therefore the lower the temperature and shorter the time during which the two are in contact, the better.

There is a curious effect depending on the temperature at which the emulsion and fresh gelatine are mixed, viz., that if quite cold the resulting plate will have a matt-surface, and the higher the temperature the more glossy it will be.

A plain solution of gelatine in pure water is very little injured by prolonged boiling; but if an alkaline bromide (or chloride) be added, it is speedily decomposed. Probably the alkaline nitrate, which is present in the emulsion in large quantity, may be even more effective.

For the washing, clean ordinary water at a temperature *not over* 50 deg. F. should be used. The writer prefers at *all times* to use water cooled down to below 40 deg. by melting ice in it. By so doing, uniform results are obtained, and where ice can be procured the cost is trifling; 3 lb. of ice will be sufficient for a pint of emulsion in the hottest weather.

In a glazed earthenware pan or other suitable vessel, put about three pints of cold water, and add three ounces of saturated solution of potassium bichromate (made by saturating clean ordinary water with the bichromate).

Before squeezing the set emulsion through the canvas, it should be cooled down so as to be as firm as possible. The water into which it is squeezed will then remain almost clear, or but slightly milky. If the *emulsion be soft*, even though the *water be ice cold*, the water will be more milky, and the emulsion take up too much. Too much excess of acid bromide, too high a temperature at the time of adding the gelatine, or keeping at too high a temperature between adding and washing, will produce the same result.

The emulsion may, of course, be washed by precipitating with alcohol, squeezing the clot, breaking it up, and soaking in water; but the writer prefers washing with water and bichromate, as described, on account of the clear and brilliant shadows so obtained.

Having cooled the beaker of set emulsion down to 40 deg. F., run a bone spatula or paper knife round, and turn out the emulsion, or cut it out in lumps. If cold, it will come out almost quite clean from the glass. Place it on a piece of coarse "straining cloth" or canvas, and squeeze through the meshes into the water, the operation being performed under the surface of the water. Leave it so for an hour. Lay the straining cloth over the mouth of another pan or large jar, and pour the mixture of emulsion threads and liquid on to it so as to let the latter run through. Squeeze the emulsion a second time through the cloth into clean cold water, and immediately repeat the operation a third time, leaving the emulsion in the last water for half an hour. When strained for the last time, place cloth and all in a large beaker, and put the latter into hot water until the emulsion is completely melted and warmed to about 115 deg. F., *i.e.*, not warmer than is pleasant to the hand. With a *clean* hand take out the cloth and squeeze it; very little will be lost. The emulsion should now measure about 16 or 17 oz. Add 2 oz. alcohol, and mix thoroughly. The alcohol may be either pure ethylic alcohol, sp. gr. about .830, or *good colourless* methylated spirit. The writer prefers the former. If the emulsion now measures less than 20 oz., make it up to that by adding clean water.

A good deal depends on the temperature at which this is done, and by careful management much may be effected. If the emulsion is sufficiently rapid, and free from green fog, it is best melted and coated at a low temperature. If it be slow and has a tendency to colour, it will be improved by heating to 140 deg. F. Mr. Wilson has had emulsions which became more than three times as rapid by this treatment; but it is a somewhat dangerous one, as too high a temperature, or too prolonged heating, may result in hopeless grey fog. This kind of fog is more apparent during development than after fixing.

The emulsion is now ready for use. It should be filtered into the coating-cup through cotton-wool to free from bubbles, and plates coated in the usual way, dried and used as usual for rapid gelatine plates, using about an ounce of emulsion for a dozen quarter-plates.

In drying arrangements, avoid the contact of gas, or of the products of combustion of gas, with the moist plates. The writer finds both to be very injurious.

The exposure is the same as for fairly rapid gelatine plates, and the development may be conducted by any of the methods to be described in a subsequent chapter.



## Elementary Photography.

BY JOHN A. HODGES.

### CHAPTER XI.

#### THE INTENSIFICATION, REDUCTION, AND VARNISHING OF THE NEGATIVE.

Controlling Density—Difficulty of so Doing—How to Determine the Quality of a Negative—The Best Course—Intensification—Want of Permanence—Necessary Precautions—How to Proceed—Reduction—How to Effect it—Necessary Solutions—Trial Prints—How to Varnish a Negative.

THE beginner will find after he has exposed a few plates, that one of his greatest difficulties will be to produce with certainty just the requisite amount of density to give a good print. Some of his negatives will be much too dense, while others will be far too thin. At first he will probably not be able to determine, by a mere inspection of the negative after development, whether it is of a character to give a good print or not, but upon taking a trial print he will find that in some cases he can only succeed in getting a flat muddy-looking picture without contrast, or vigour, and that in others the negatives take an abnormally long time to print, and the results, when attained, are hard and crude. The first of these defects is due to over-exposure, the employment of too vigorous a developer, or one containing too little pyro; and the second to under-exposure, or too prolonged development, or to both combined. Of course, the *best* thing to do in such cases, when it is practicable, is to make a fresh negative by exposing another plate on the subject, modifying the exposure in the direction indicated by the result obtained in the first instance. But there are many occasions when it is impossible to do this, and when, at the same time, it is very desirable to get as good a result from the defective negative as it is possible to obtain. Now, fortunately for the photographer, there are two processes by which negatives possessing either of the above-named faults may be to some extent improved, and these are called "Intensification" and "Reduction." The meaning of the two terms is probably sufficiently obvious without further explanation. The first one with which I shall deal—namely, Intensification—is applied to a process by means of which the density or opacity of the negative is increased or strengthened, when from any cause it is too thin to give a good print. The second term, Reducing, is applied to the converse process, namely, that of reducing or lowering the density of a negative when it is excessive. It will be readily understood that these two processes, when intelligently employed, place a wonderful power in the hands of a photographer. But, notwithstanding, my earnest advice to the beginner is to aim at producing, by careful exposure and development alone, a perfect printing negative requiring no after treatment, and he should always try to avoid the necessity of resorting to either process. However, as I have said, it sometimes happens that partial failure will occur, and then it is that the processes of intensification and reduction stand us in good stead.

There are many formulæ given in text-books for compounding intensifiers, but I do not intend to discuss their relative merits here, nor do I wish to depart from the broad system which I have endeavoured to carry out in writing these articles, of presenting one practical and well-tried mode of working to the reader, rather than confuse him by describing alternative methods.

The particular intensifier which I shall advise the reader to adopt is that known as the Mercury Intensifier, and it has the advantage of being one of the oldest methods which have been applied to the intensification of gelatine plates.

It is true that it has had one fault alleged against it' namely, that negatives which have been so treated have been found to be wanting in permanency, and have sometimes become discoloured, but investigation has pretty conclusively proved that where this has occurred, the negatives have not been properly washed between the different operations. Undoubtedly, when such precautions are neglected fading will probably result. The process is an extremely simple one, and the necessary preparations very few. To begin with, the negative which is to be intensified must in the first place have been *thoroughly* washed, in order to remove the least trace of fixing solution which might otherwise remain in the film. About two hours' washing in running water in the washing tank which has been described, will probably be sufficient to effect this. If, as will probably be the case, the negative has been allowed to dry, it must first of all be soaked in clean water until the film has become thoroughly wet. It should then be placed in the dish which has been reserved for the special purpose of intensifying, and some of the intensifying solution, which has already been prepared, poured over it. It will be understood that the whole of these operations can be performed in actinic light, and, therefore, the change which the plate will now undergo will be clearly seen. It will very soon lose its dark appearance and gradually assume a white or pinkish colour. This will be more easily observed if the dish in which the operation is performed be a black one. In from three to four minutes the action will probably have proceeded sufficiently far; the solution may, therefore, be carefully poured back into its bottle, as it will last a long time and may be used over and over again. The caution as to its poisonous nature, which has previously been given, should be remembered, and due care taken not to spill or drop any about the table or floor. The negative must then be most thoroughly washed, for upon the effectiveness of this operation the future permanency of the negative will in a great measure depend. It should have at least half an hour's washing in running water. At the end of that time it is to be replaced in the tray, and a weak solution of ammonia (made by adding 15 minims of a 10 per cent. solution of ammonia to 2 oz. of water) poured over the plate. Under its influence the white colour will disappear, and the plate rapidly darken, ultimately becoming quite black. At this stage the action will probably have gone sufficiently far, and the plate may be removed from the solution and thoroughly washed under the tap. Upon examining it by transmitted light it will be found to have acquired a considerable accession of density, and will probably be capable of giving a good print. After a thorough washing the operation will be complete, and it may be placed in the rack to dry. The degree of density attained may to some extent be varied by the length of time the plate is allowed to remain in the mercury solution, and by altering the strength of the ammonia bath. If only a slight increase of density is desired, only a few drops of the ammonia solution need be used; if, on the other hand, the negative is very thin and requires considerable strengthening, the proportion of ammonia may be very considerably increased. Various other solutions may be employed to effect the blackening of the image after bleaching, some photographers preferring to use a few drops of a saturated solution of sulphite of soda, and where only a little extra density is needed this is to be preferred. In the converse case of a negative requiring a considerable accession of density, equal portions of the two solutions used for compounding the hydroquinone developer may be mixed and applied to the plate.

We will now consider the treatment of a negative which



is over-dense, and requires to be reduced. There are several methods by which the process known as reduction may be effected, but I shall only describe one. I may, however, mention that when only very slight reduction is necessary the negative may be sufficiently reduced by allowing it to remain for a short time in an ordinary clearing bath composed of a pint of saturated solution of alum to which half an ounce of hydrochloric acid has been added. When, however, the negative is very dense, more vigorous treatment will be necessary. Two ounces of water are poured into a clean measure, and about ten drops of a solution of perchloride of iron (of the strength used in pharmacy) added. The negative, if dry, should have been allowed to soak in water, in the manner already described, and is then to be placed in a tray, and the solution poured over it, and allowed to remain for a few minutes. It is then removed, but no visible change in its appearance will be detected at this stage. It should then be placed in a second tray containing three ounces of water, to which has been added about two drachms of the saturated solution of hypo. The reducing action will at once commence, and the plate must be carefully watched, as the action sometimes proceeds so quickly as to be almost beyond control, in which case over-reduction might ensue, and the negative be spoilt. If, on the other hand, the reducing action proceeds very slowly, a few drops more of the solution of perchloride of iron may be added to the first solution, and the negative re-immersed, and, without washing, again re-transferred to the hypo solution, when probably the action will proceed. These solutions must be thrown away after use, and the dishes, of course, thoroughly washed. When the reduction has proceeded sufficiently far, the negative is to be removed from the solution and thoroughly washed.

The beginner should make it a rule to take a trial print from every negative with a view to ascertaining its printing qualities, and whether it requires to be either intensified or reduced; and if it does not, it should at once be varnished. If, however, either intensification or reduction be necessary, varnishing must be deferred until those operations have been carried out. The object of varnishing is to protect the film, which, though apparently tough, is very liable to become scratched or stained by contact with the silver paper used in printing. Stains so caused are extremely difficult to remove.

The operation of varnishing a negative is very often a difficult one to a beginner, and as it can only be learnt by practice, he will do well to make his first attempts on some spoilt negatives. The object is to cause the varnish to flow over the entire surface of the plate without forming markings or ridges which might show in the print. Any good negative varnish may be employed. Personally, I prefer Hubbard's, and always use it. The negative to be varnished should first be lightly brushed with the camel-hair brush to remove any adherent dust, and then held over a gas flame until it is just as hot as the hand can bear. The plate should then be held between the thumb and finger of the left hand in as nearly a level position as possible, and a pool of varnish poured in the middle; the plate is then slightly inclined so as to cause the varnish to flow towards and fill up one corner of the plate, and, directly it does so, tilted so that it runs to the next corner, repeating the tilting with a slight rotatory movement until the varnish is made to cover the last corner, when the plate must be tilted vertically and the excess of varnish allowed to drain back into the bottle. The rotatory motion must be continued at this point in order to avoid the formation of ridges. The plate must then be held over the gas flame or in front of a fire until the varnish sets quite hard, which it will do in a few minutes. The operation, although a difficult one

to describe, may easily be acquired with a little practice. Varnishes are now supplied which may be applied to the plate with a camel-hair brush, but such a mode of working is very clumsy, and one which I would not recommend the reader to adopt. The negative, after varnishing, will be ready to print from.

(To be continued.)



#### PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN.

THE monthly technical meeting of the Society was held on the 22nd ult., Mr. J. Traill Taylor in the chair.

Mr. T. R. Dallmeyer described the new form of his tele-photographic lens, and pointed out the improvements made over the original form. He now uses a portrait lens of the patent type combined with a negative lens—a symmetrical double combination of negative focus. With this combination to correct the spherical aberration it is only necessary to slightly move the positive lens.

The Chairman said that with regard to the exposure there was but little difficulty in estimating it by an inspection of the image on the ground-glass, and judging by experience. The exposure was wonderfully less than might have been anticipated. The Hon. Secretary asked whether the exposure was not simply proportional to the area of the image. Mr. T. R. Dallmeyer said that was practically what it came to. In answer to a question by the Chairman, Mr. A. Cowan expressed an opinion that a large direct picture taken with this new lens was better than an enlargement would be if taken with a short-focus lens and enlarged to the same size. Mr. Dallmeyer concurred, and said that in some examples, which he had exhibited elsewhere, negatives show results which certainly cannot be seen by the eye, and moreover could not be discerned with an opera-glass. He said the system could not be adapted to the rapid rectilinear lens.

Mr. E. Clifton exhibited the "Frena" hand-camera, which he said was manufactured by Messrs. Beck, but the sale of which was in the hands of the London Stereoscopic Company. The camera was designed for use with cut celluloid films, lantern size. The lens was a short-focus rapid rectilinear with a revolving shutter. The peculiarity of the camera lay in the arrangement for changing the films. The films had a series of notches cut down each side; between the films were placed pieces of opaque card, also notched, but so that the notches would not register with those in the films. The notches rested on a series of pins, and when a handle at the side of the camera was moved downwards, the pins were shifted and the film dropped; the handle was turned a little more, and the pins went back and gripped another film and dropped the card, the principle being somewhat similar to that of an escapement.

Mr. R. G. Mason exhibited a combined table and lantern microscope.

The Hon. Secretary explained a misapprehension that appeared to exist with regard to some remarks he made at a previous meeting upon the subject of copying inclined pictures.

The Chairman stated that a large collection of silver prints made previous to the year 1862 was on view, and asked for any remarks relating thereto.

The Assistant Secretary stated that the old silver prints had been lent by Messrs. F. Bedford, E. Clifton, F. E. Currey, W. England, E. W. Foxlee, Lt.-Col. J. P. O. Mitford, Photographic Club, and J. Traill Taylor; and read letters from Mr. F. E. Currey and Lt.-Col. J. P. O. Mitford respecting the pictures sent.

The Chairman stated that from an inspection of the prints on the table it would be seen that silver prints did not necessarily fade, and that it was possible, under certain conditions, to make even albumenised prints that would be reasonably permanent.

Mr. E. W. Foxlee explained that some of the pictures that he had sent had had a very severe experience, and in many cases the mounts were badly mouldered. The prints were toned in the old hyposulphite of soda and gold bath. They had a very short washing, considering what was now thought necessary. There was one feature about them which he thought had conduced to their permanence; they were made on paper that was highly salted and highly sensitized.

Mr. W. England thought the main cause of fading in prints was insufficient washing.

The Chairman remembered a print made in 1858 or 1859 that was fixed in strong hypo, slightly rinsed, then blotted off. It remained in his possession for very many years, and up to the last time he saw it, retained its pristine vigour, showing that the presence of hypo in the paper did not act in a deleterious manner. Mr. E. W. Foxlee attached a great deal more importance to thoroughly fixing than to prolonged washing, and would rather have incomplete washing than incomplete fixing.



## Instantaneous Photography.

By W. JEROME HARRISON, F.G.S.

### CHAPTER XIX.

(Continued from p. 251.)

#### STAND CAMERAS AND HAND-CAMERAS.

##### APPURTENANCES OF THE HAND-CAMERA.

*Finders.*—Most hand-cameras have either one or two miniature cameras attached to them, which are known as "finders," and which serve to show roughly the extent of the image which will be received upon the plate, and also to "centre" the principal object. Many people consider that finders of this kind are unnecessary; and it is, indeed, quite possible to learn by experience the extent of the view, at any given distance, which will be included in the photograph, and also to point the camera correctly at the chief object of interest. We must confess, however, that we use a finder on most occasions, and find it very useful. Two finders are affixed to the majority of hand-cameras, since when the camera is turned on its side (to take pictures the long way of the plate) the first finder is not available. To be useful, a finder should be fixed with its ground-glass an inch or so *below* the surface of the camera, as the image can then be seen more plainly. The chief fault of such finders is the very small scale upon which they represent the picture, their area being only about one square inch. To remedy this, we have two methods by which the image is seen upon a ground-glass screen of *the same size* as the actual picture upon the plate. The first method is to use a double camera, the upper of the two having a ground-glass screen upon its top. The lenses of the two cameras are identical, and whatever is seen upon the focussing screen of the top camera will be received (when the exposure is made) upon the sensitive plate of the lower camera. Upon this plan we have the admirable "Twin Lens Artist" of the London Stereoscopic Co., and Ross's "Divided Camera." In the second method a movable mirror inside the camera reflects the image on to a ground-glass screen, fitted into the top of the instrument. When the exposure is made, the mirror rises, and lies flat against the ground-glass. Cameras upon this plan are Loman's Reflex, and Watson's Vanneck. In *both* these methods we have the great additional advantage of being able to focus the image as seen upon the ground-glass, right up to the moment of exposure. It should be noted that *fine* focussing is impossible if the reflection takes place from the usual piece of glass, silvered at the back; the reason is that there is a second reflection from the *front* surface of the glass, and the two tend to confuse one another.

All finders should have a sliding cover, so that they may not be visible unless in actual use, and to protect them from dust and from breakage. The most convenient arrangement is a rolling shutter, which simultaneously covers the ground-glass of the finders, their lenses, and also the camera lens.

Some makers provide their finders with a shade, which can be raised so as to screen the ground-glass from the sun. This is more useful in the large or full-size finders than in the small ones. But as one generally works with the sun more or less *behind*, the ordinary screen is often useless. In this case a light strap, by which the camera is suspended round the neck, is useful, as one hand can then be spared to screen the finder.

*Arrangement for Focussing.*—By far the best arrangement for focussing the picture is that with the full-sized finders described above. In many cameras the so-called "fixed focus" method will probably be found the most suitable by three out of every four photographers. In other

makes, a focussing scale marked in feet (usually from 10 ft. to 30 ft.) will be found marked on the side of, or underneath the camera. By moving a lever index along this scale, the plate which is to be exposed within the camera is caused either to approach or to recede from the lens. On this plan we have the Stereoscopic Company's Dispatch and Artist Cameras, Humphries' Quadrant, Perken's Optimus, and many others.

*Automatic Counting of Exposures.*—As the plates in a hand-camera are frequently exposed in rapid succession—too rapidly to admit of each exposure being noted down in a book—it is very useful to have a plate-counter attached to the instrument; and this should be automatic in its action. In most cases the counter takes the form of a circular ivory disc, numbered to correspond with the number of plates which the camera is intended to hold, and arranged to work at some convenient point just beneath the lid, in which is an opening allowing only one number on the disc to be seen at a time. The movement which causes the changing of each plate can easily be caused to move the disc in a corresponding way. Another method is that employed in the Talmer, where the shifting of a little sliding lid exposes a piece of ruby glass, through which the edges of the plate-sheaths are visible, and as there is a bright division plate between the exposed and the unexposed sheaths, the number of either can be readily perceived.

*The Tripod.*—A light tripod is a very useful adjunct to a hand-camera. Of the ordinary pattern, Watson's four-fold Cyclist measures only 16 in. in length when closed up. Walking-stick stands are made by Turnbull, by Adams and Co., and by Shew and Co.; and the two last firms (and also H. Park) have a capital and very light bamboo tripod, weighing only 12 oz.

*Clamps and Clips* have been devised by sundry makers, in order to attach the camera to cycles, to trees, to fences, rails, etc.; but they are of little service, mainly because the support is seldom in the position required.

*Case or Cover for Camera.*—A leather or canvas case in which to keep the hand-camera is an appurtenance worthy of remembrance. It keeps out dust and wet, and acts as a protection in every way. Many workers neglect their tools sadly. All working parts require occasional oiling, the interior needs dusting, the lens wiping, etc. This should always be done on returning home; and the camera then stored in its case, ready for use another time.

##### MANIPULATION OF THE HAND-CAMERA.

Sometimes the photographer has the same over-confidence with respect to his own powers as regards the use of a hand-camera, as the historical character who, when asked if he could play the fiddle, replied, "Don't know, never tried!" To use a hand-camera to advantage, the special instrument selected must be carefully studied; and even then it is only after much practice that the best possible results will be obtained. From our own experience we should recommend the following procedure.

(1) *Preliminary Examination.*—Having read over the maker's instructions several times, the camera should be carefully examined in a good light. Each part should be studied and operated. The sheaths should then be charged with spoiled plates or old negatives, and tests should be made as to how rapidly the whole can be exposed. Not that the rapidity is desirable in itself, but as a sign that the various movements necessary for consecutive exposures have been mastered.

(2) *Charging the Camera.*—Having now gained a general acquaintance with the instrument, it should be taken into the dark-room and carefully charged with the sensitive plates or films which are to be used. A ruby lamp should



be employed, and care should be taken that the sheaths fit accurately into their places, and that the springs and catches are in good order. Before the sheaths are inserted, the "plate counter" should be moved until it shows the highest number marked upon it; then the first exposure made will be recorded as "1," and so on. Before inserting the plates, both the sheaths and the interior of the camera should be well brushed out and rubbed to remove dust, a fruitful source of pinholes.

(3) *Manipulating the Hand-Camera in the Field.*—Many are the ways in which the worker with the hand-camera holds the instrument when he is about to make an exposure. If the ordinary form of sunk finder be employed, the best plan is to hold the camera *under the right arm*. It is now moved until the "principal object" comes fairly in the centre of the ground glass, and the button is then pressed and the exposure made.

The second method is to hold the camera against the *lower part of the chest*. This is the plan adopted by many who disdain the use of the small finder. There can be no doubt but that many opportunities are lost by the time spent in twisting the instrument about until the tiny image on the average "finder" is adjusted to the satisfaction of the manipulator. With practice it is possible to level the camera by the eye alone very accurately at the desired object; and for certain classes of work where promptitude is an absolute necessity, the "pointing" method is to be preferred. For "full size finders" the front or chest position is also the best place for the camera.

Others, again, "sight" the instrument by holding it up and *looking along one edge* of the camera, so as to point it at the object to be taken. The object so seen will also be on the centre of the plate.

Mr. W. Chadwick advises the instrument to be held *just under the chin*, the chin resting upon the camera, in fact.

*How to Hold the Camera Steadily.*—The human body is never quite still. The principal motion—other than that of a general swaying of the whole body, which it is easy to avoid—is due to the expansion and contraction of the chest by the act of breathing. Now, as the hand-camera is by nine out of ten workers pressed against either the side or the front of the chest at the moment of exposure, this expansion or contraction of the lungs is very liable to produce sufficient motion in the camera to cause a distinct blurring of the outlines of the picture. The best plan to avoid this, we find to be, to draw a long breath just before the exposure is made. The lungs are thus kept fully inflated, and are, for the moment, at rest. This practice soon becomes a habit, and is done unconsciously. Or the opposite plan may be adopted, and the exposure made just after the breath has been expelled, and while the lungs are empty.

#### POINTS WHICH IT IS DESIRABLE A HAND-CAMERA SHOULD POSSESS.

(1) *Unobtrusive in Appearance.*—Best material for cover is black leather. All brasswork should be "finished black." No projecting parts. All lenses, etc., covered when not in use.

(2) *Lens Working up to f/8* (if to f/6 so much the better).

(3) *Not too Bulky.*—For quarter-plate pictures most makers now get the bulk of a hand-camera within about one-seventh of a cubic foot—say 250 cubic inches. This gives (for example) a rectangular box measuring 10 by 5 by 5 inches.

(4) *Reasonably Light.*—The weight of the camera—quarter-plate—uncharged, need not exceed 4lb. or 5lb.

(5) *First-class Workmanship and Materials.*—Remembering the complex nature of the work a hand-camera has to do, and the small space it has to do it in, it is evident that

only high-class and well-paid workmen are able to construct instruments that shall work "sweetly" and to the satisfaction of the purchaser. Further, only thoroughly well-seasoned wood, good leather, best brass-work, etc., should be employed. It is not too much to say that the simplest camera by a good workman would be far preferable to an instrument bristling with all the latest patents, but badly put together. The difference between a hand-camera at one guinea and another at ten guineas lies mainly in two things—the latter has a first-class lens, and first-class workmanship and materials.

(6) *Diaphragm Adjustable from Outside of Camera.*

(7) *Automatic Swing-back.*—We know of no hand-camera which possesses this feature. And yet the "drunken houses" seen in most snap-shots point out its desirability. In magazine cameras it might be secured by providing the sheaths with projecting points from which each sheath in turn would swing freely just before exposure, being then fixed in position by a clamping-screw.

(8) *Fixed Focus, or Adjustable Focussing?*—This must be according to the experience of the operator. Where the hand-camera is only occasionally used, the former plan is likely to find favour. Experienced operators, with opportunities for regular practice, will prefer the latter.

(9) *Lenses of Medium to Wide Angle.*—Say lens of 5 or 5½ in. focal length for a quarter-plate camera.

(10) *Shutter adjustable (from outside Camera) to various speeds.*

(11) *Camera Impervious to Light, except during Exposure.*—This is a point often very deficient in the low-priced cameras; in fact, it is one of their chief faults. The lens ought to be automatically closed by the same action which sets the shutter.

(12) *Shutter "Ever-set."*—This is desirable, though not essential. It saves the memory, and simplifies the operations.

(13) *Capacity for Carrying fair Number of Exposures.*—In this respect the "film in roll-holder" stands supreme. Its defect is the difficulty of selecting and cutting out from the long roll any given exposure which it is desired to develop at once. Most workers find that material for a dozen exposures is sufficient, except for foreign travel.

(14) *Power of Substituting Sets of Unexposed for Exposed Plates or Films without having to Visit a Dark-room.*—In several makes of hand cameras there are light-tight and removable reservoirs, which can be exchanged for fresh reservoirs in the open air.

(15) *Changing Plate without Opening Camera.*—This excludes the dark-slides and bag-changers. At the same time the latter possess certain counterbalancing advantages.

(16) *Power to Expose any Given Plate at Will.*—When we pass from the dark alleys of (say) a fishing village, to its sunny harbour and pier, we desire probably to use slower plates for the latter than for the former subject. With this object we may have put six medium and six extra-rapid plates into our magazine before starting. But very few hand-cameras (other than those fitted with dark-slides, which certainly score on this point) permit this selection of plate to be exercised.

(17) *Camera Substantially Built and Rain-proof.*—A hand-camera ought to be able to stand some knocking about; in fact, it should possess a capacity for being sat upon, if need be. In the rage for lightness, we are liable to get flimsiness as well. It is to be feared that an immense amount of rubbish has been put on the market during the last two or three years; and this is another point in which the extra money charged for a high-class hand-camera ought to repay its purchaser.

(18) *Rising Front.*—In most town or street views taken with a hand-camera we get too much foreground. It ought



to be possible (at all events, by opening the camera front) to raise the lens half an inch or so, so as to obviate this. This is another argument for using a lens able to cover a size larger than the plate employed.

(19) *Hole for Tripod Screw in Bottom and Side.*—This is useful when giving time exposures.

(20) *Power of Focussing upon Ground-glass at back, as in Ordinary Camera.*—This is not needed in such instruments as the "twin-lens," or the "Reflex," in which the same object is secured in another way. The larger "Kodaks" are now fitted with a proper focussing screen.

(21) *Security from Meddlers.*—The hand-camera possesses a natural attraction for servants, loungers, etc., who love to handle the mysterious black box, and to test all its (to them) mysterious screws, projections, etc. Every hand-camera ought to have a good lock; it is further an advantage to be able to draw down a screen in front of the plates, so that they are protected from exposure in case the shutter is accidentally "touched off." This screen also serves to protect the plates from dust, etc.

(22) *Simplicity.*—This is one of the greatest virtues of a good hand-camera. The less complicated the parts, the less likely is the machine to go wrong. The fewer the operations which have to be performed, the less likely are we to forget any of them.

(23) *Ease and Certainty of Arrangement for Changing Plates.*—Nothing is more aggravating than—with the automatic changers—for a plate to get stuck. A man has been seen on the top of Snowdon jumping on his hand-camera, being reasonably enraged at the refusal of the instrument to "operate," after he had lugged it up the mountain!

(24) *Power to Use Lenses of Different Focal Lengths.*—In the "fixed focus" instruments this is, of course, quite impossible. The "camera in a box" scores in this respect.

It is not probable, perhaps not possible, that all the points enumerated above will ever be found combined in one and the same hand-camera. But it is well to have an ideal before our mind's eye, in order that we may estimate how nearly any given instrument approaches to it.

THE END.



## Photographing on Wood for Engraving Purposes.\*

BY W. J. RAWLINGS.

As photographing on wood is my subject for this evening, perhaps a few words will not be out of place on the art of drawing and engraving on wood. It is generally understood that for illustrating any journal, catalogue, etc., for printing type-high in the ordinary press, engraving must be resorted to in some way or another, either by wood engraving, photo-zinco, or what is termed the half-tone relief process, which is very much used of late for illustrating principally pictorial or portrait work; but there is no process yet to equal first-class wood engraving for mechanical and kindred subjects.

To produce an engraving for this purpose, you must either draw or photograph the subject on the wood, the material used being box-wood, cut end-way of the grain, and finished to a true and smooth surface. To draw upon this it must first receive a preparation of either zinc or flake-white to facilitate the drawing. When drawn it is given to the engraver to cut, then from him it is passed to the electrotyper, who takes as many electros as are required, and from these the actual printing is done.

When the artist makes a drawing upon the wood, he does not trouble to draw every line by which degrees of shadow are represented in the engraving; he merely shows the light and shade, and leaves the engraver to translate these shades into lines or stipple, according to which would be most effective.

In most of the periodicals of the day we know that many of the

engravings have been photographed on the block from the original design or drawing, thus eliminating any chance of error on the part of the artist in making his reversed drawing on the wood. The application of photographing on wood has become so successful in facilitating the work of the engraver that it has come into general use of late, but all photographs on wood are not altogether satisfactory to the engraver, there being oftentimes a film left which sadly interferes with the cutting of fine work.

Photography was applied to wood engraving purposes by a Mr. Sperge in 1859, and his process was published in the *Photographic News* of December 16th of that year. It consisted of giving the wood a coating of albumen and then of gelatine; when dry, sensitising with a solution of silver nitrate, and the printing operation performed as for paper; it was then fixed in a hot solution of hyposulphite of soda to remove the gelatinous matter, which would otherwise cause great inconvenience to the engraver in cutting.

Coming to the process I am now using, and which I will demonstrate before you this evening, I can state that in no case does it stain the wood, and one can make more certain of obtaining a good image than by any other printing-out process.

In the first place the block must be prepared in such a way as to give it a uniform colour, and to fill up the pores of the wood to prevent staining, this being effected by sprinkling a small quantity of zinc-white and adding sufficient albumen, spreading with the ball of the hand until the coating is even and smooth, and finally finishing with a camel-hair brush. This operation requires some practice to perform successfully. If rightly coated, it will not give any trouble to the engraver, not even with the finest tints. All blocks will not require the same amount of albumen and zinc-white, as some are more porous than others. The right proportion can only be obtained by experience. When perfectly dry, sensitise by coating as you would for a collodion plate with the following solution:—

|            |     |     |     |     |     |     |        |
|------------|-----|-----|-----|-----|-----|-----|--------|
| Ether      | ... | ... | ... | ... | ... | ... | 5 oz.  |
| Alcohol    | ... | ... | ... | ... | ... | ... | 5 "    |
| Pyroxyline | ... | ... | ... | ... | ... | ... | 20 gr. |

When the pyroxyline is dissolved, add 75 gr. silver nitrate dissolved in the smallest possible quantity of water. It is best to keep the above solution in the dark-room. This solution gives a slight film, which must be removed from the block before printing; to do this, use cotton wool saturated with the following solution:—

|         |     |     |     |     |     |     |       |
|---------|-----|-----|-----|-----|-----|-----|-------|
| Ether   | ... | ... | ... | ... | ... | ... | 5 oz. |
| Alcohol | ... | ... | ... | ... | ... | ... | 5 "   |

Dry, and coat again with the sensitising solution before quoted, and apply cotton wool saturated as before. By giving the block a double coating of collodion, the image prints more rapidly and to a better colour. The block is now absolutely left without any film, and is ready for printing under a reversed negative.

The most simple and quickest method I have found for fixing the negative and block together for printing is by brass clips made for he purpose.

These work very well up to whole-plate size, but for larger blocks I have an apparatus of my own invention which I shall have the pleasure of showing you. The time required for printing varies according to the intensity of the light and the density of the negative. With a bright day at this time of the year, with an average negative, half to three-quarters of an hour will be found sufficient; with magnesium ribbon, about six or eight feet, burned at a distance from six to twelve inches away from negative, will be found ample.

The negative is now removed, and the print is fixed for two or three minutes in a strong solution of hypo-sulphite of soda, the block then being washed for about half a minute, or even less, when it is placed on its edge to dry, which will take some few minutes. Blocks treated by this process can be produced ready for the engraver under the hour.



**Photographic Society of Ireland's Lantern Exhibition.**—On the 21st ult. an exhibition of lantern slides by the oxy-hydrogen lime light was held in the Town Hall, Kingstown. The views, which numbered about 260, were the work of members, and comprised an extensive variety of subjects, were exhibited on an eighteen foot sheet, the lantern being under the control of Mr. James Carson, while the various views—which comprised land and sea scapes, architecture, exterior and interior, instantaneous street scenes, and photomicrographs—were explained by Professor J. A. Scott, Vice-President of the society. At the close of the ordinary views the recent competition sets were shown, the set which won the silver medal (Mr. J. H. Hargrave's) being much admired for their very great excellence, as were also Mr. L. R. Strangway's views of Newgrange ruins. Amongst those who also exhibited slides were Mr. R. M. Inglis, N. Colgan, Greenwood Pim, Geo. Drury, Miss White, Dr. Cosgrave, and M. Hedley.

\* Read before the London and Provincial Photographic Association.



## Lantern Slides by Reduction, by Artificial Light.

By V. W. MISSELBROOK.

I PROPOSE this evening to shew you a method of producing lantern slides by reduction from larger negatives, using artificial light for illuminating the negative.

The apparatus required is, as you will be glad to know, simple and inexpensive.

I have here two lamps, wall pattern, with tin reflectors, of ordinary make, such as may be purchased at any oil shop for about 1s. 6d. The wicks of these lamps are 1 in. in width. (Take a note, please, as it may be useful for future calculation.) Whilst on the subject of lamps I may tell you the best method of trimming the wicks so as to obtain the best light is this:—Turn the wick up until it is just above the dome-shaped portion, and trim to the circular shape of the dome with a pair of sharp scissors. Assuming the lamps to be trimmed and lighted, I place them, upon a table, of course, about 3 ft. in front of me with the backs towards me, so that the wicks are about 10 in. apart.

Next, I take a frame to hold the negative (half-plate size) which I am about to use. (Mine is the focussing glass frame of a home-made camera. If you should use the same portion of a camera, remove the ground glass; it is not required. A half-plate printing frame will, of course, answer the same purpose. I place the negative in the frame, and there secure it. I now place the frame with negative between the two lamps, so that to support the frame vertically you will notice that the negative is jammed between the reflector and the backs of the lamps.

The next article required is a reflector. A looking-glass is, of course, out of the question. I use a sheet of clean *white* blotting paper, which, I think, is best suited to the purpose, as it reflects while at the same time it diffuses the light. A sheet of ground opal glass could be used no doubt, but its expense and fragile qualities are against it. To proceed, I place this reflector about 6 in. from the negative, so that it will reflect the light from the two lamps through the negative.

The apparatus is now complete, excepting the setting-up of the camera. To reduce to lantern size, the lens of the camera, if of about  $8\frac{1}{2}$  in. focus, will require to be about 3 ft. from the negative.

Now to make the slide. It will be as well to mark a  $3\frac{1}{2}$  in. square on your focussing screen if you use that for focussing. My method is this. I turn the focussing screen back out of the way and insert a dark slide (book pattern). Whilst in its place, or before, if necessary, I turn back the outside half of the slide so as not to be in the way, and draw the shutter as far as is necessary of the other half of the slide that is to be used. I then, after turning up the lamps, place a half-plate focussing screen in the slide to focus upon, or when preferred the lantern-plate carrier may be used with a  $3\frac{1}{2}$  in. square ground glass inserted.

The screen removed, I replace it with the plate-carrier, which is a tight fit, in the slide so as to keep its place. My carrier is made of the lid of a cigar box, the piece cut out of the centre being used to back up the plate. I now place a lantern-plate in the carrier, being careful not to fog the same, and keep it up to register with a spring at the back, which is attached to the carrier. Previous to this, of course, the lens must have been capped. All is now ready for exposure. The lens I use at  $f/8$  aperture.

The exposure required will be about ten minutes. This may seem a long time, but you must remember I am using lantern plates, which are in comparison very slow to, say, Thomas' extra rapid, for instance. In reality the exposure is but ten times that of diffused daylight.

The exposure being made, we now proceed to develop the plate. I use the fixed carbonates of soda and potash as an accelerator, as being less liable to cause frilling than the caustic alkali, its disadvantage being, however, that it is liable to cause a yellow stain if the slide is much under-exposed, which fault may be remedied by passing the slide through a clearing bath.

I think the method I have tried to explain will be found useful by those amateurs whose only spare time is in the evening.

## OXFORD PHOTOGRAPHIC SOCIETY.

ON the 31st ult., Mr. Paul Lange, President of the Liverpool Amateur Photographic Association, delivered his lecture entertainment, entitled "Norway, the Land of the Midnight Sun," in the Oxford Town Hall. The entertainment was to have been given in the new theatre, which had been specially lent for the occasion by the proprietors, on March 17th, but all hopes of this had to be abandoned and new arrangements made, as the theatre was unfortunately burnt down on the 10th of March. The lecture was delivered under the auspices of the Oxford Photographic Society, and the proceeds were given to the Building Fund of the Radcliffe Infirmary. The Master of University (Dr. Bright), the Treasurer of the Infirmary, had been announced to preside, but in his unavoidable absence the duties of chairman were discharged by the Rector of Carfax, the Vice-Chairman of the Committee, who, in opening the proceedings, remarked that many of them, like himself, had never been to Norway and possibly never would go. The next best thing was to have Norway brought to them, and he had no doubt the lecture would be very instructive and interesting. Mr. Lange was Vice-President of the Liverpool Photographic Association, which was one of the largest in the country, and the views they would see were from photographs of his own taking. The lecturer after a short introduction proceeded to give a graphic description of the country, speaking first of Bergen, which he described as a sight which would emboss itself on their minds. Pictures of the fish market and cathedral, with the timber-built dwelling-houses, were next shown, and a description given of the picturesque costume of the Norwegian women. The manners, customs, and characteristics of the people were interesting, as also was the assembly of the people for divine service, which was described and illustrated at some length. Several waterfalls and mountains were shown, as photographed by the lecturer, who praised the Norwegians amongst other things for their kind treatment of dumb animals, which he said was an example to the English. After a short interval the journey was continued, and descriptions given of churches, food, salmon fishing, the collection of lobsters for exportation to England, glaciers, etc. The scenery produced was exceedingly beautiful, the photographs being clear and distinct. The lecture was interspersed with the bright witticisms of Mr. Lange, who was several times loudly applauded, and the droll manner in which many of the adventures were narrated caused much laughter. The cloud effects produced from the lantern were particularly charming, and altogether the lecture was of a very high class and interesting character. A good sum will be handed over to the Building Fund as the result of the entertainment.

**Blackheath.**—On 23rd ult. ordinary fortnightly meeting, Mr. J. T. Field (Vice-President) in the chair. Demonstration, "Carbon Process," by the Autotype Company. The excellence of this Company's system, and the beautiful and permanent results obtainable thereby, are too well known to need further comment here. Winter session closes Wednesday, April 6th, with *conversazione* and exhibition of members' work, and of the *American Amateur Photographer* slides.

**Midland Camera.**—General meeting, 1st inst., Dr. Hall Edwards in the chair. The Hon. Secretary, Walter D. Welford, gave his paper upon "Hand-Cameras, their Construction and Use." Dealing first with the want of success so often heard of, he explained that a hand-camera required more experience and practice than an ordinary stand camera. Next followed an attack upon the word "detective," and the abuse of indiscriminate shooting off. Lenses and shutters being disposed of, the various cameras in the market were dealt with in the following order: Box-cameras, bag changers, well system, grooved reservoir, lever movements, and reflector principles. The following were amongst those shown: Griffiths' Two Guinea, Ashford's, the Talmer, the Cytox, the Alert, the Ideal, Crouch's, the Artist Twin Lens, and the "Itakit." The latter, which is of metal, very simple in construction, and carrying twenty-four plates, was shown by Mr. W. J. Spurrier. Mr. Welford next dealt with the position in which to hold the camera, and urged every user to thoroughly study the mechanism at home first. He concluded with advice as to street scenes, and a strong appeal to members to utilise all opportunities in that direction. In addition to the cameras, a series of negatives taken last week were shown, and at the end of the paper some 200 slides were thrown on the sheet.



## THE BIOPHANTOSCOPE.

THIS ingenious invention, for which we have to thank Mr. Rudge, of Bath, may be described as an adjunct to the optical lantern, by means of which the natural movements of life can be depicted upon the screen.

The biophantoscope is at present in its infancy, and has as yet only been applied to movements of the face; it will therefore be convenient in the following description to confine ourselves only to this use of the instrument. It does not, however, need any great flight of the imagination to realise that there is no limit to which it may be applied, and that just as a face can be made to talk, so animals can be made to move, the number of their movements, and the various positions that they assume being only limited by the size of the machine. In order to make our description more clear, we will suppose that the biophantoscope only shows two changes of the face, viz, from rest to laughter, and vice versa.

Now this simple and modified biophantoscope consists of a box about three inches deep, eight long, and four wide; it has a sliding lid which can be entirely removed, and which is withdrawn when the instrument is in use. Upon what would be the bottom of the box there are two lenses mounted side by side, and about four inches apart. On a carrier inside this box is the lantern slide which has two photographs of a face upon it, one at rest, the other smiling, and they also are four inches from one another, so that each is of course behind one of the lenses. This box is now placed in front of the condenser of the lantern, so that its slide occupies the usual position of the lantern slide. The whole apparatus now forms an optical lantern, with two lenses on its front instead of the usual one, and two pictures, one to be projected by each lens. There are two other important points—first the light, that is the body of the lantern with its condenser, can be shifted slightly from side to side, so that it may be directed through one or other lens as desired; and secondly, the two lenses are so arranged that they will throw their respective images upon the same portion of the screen.

We will suppose now that behind the right hand lens we have the photograph of the face at rest, then by turning the light to that side, this picture is of course seen upon the screen; behind the left-hand lens there is the other photograph, which is smiling; if now the light be quickly turned from right to left the picture upon the screen will appear to smile, and by again reversing the light the face once more assumes its former appearance. It is upon this principle that the apparent movements are brought about; the process is simple, the results are marvellous. It should have been mentioned that as the light is shifted upon one lens that falling through the other is completely cut off. Now as to how Mr. Rudge obtains his two images upon the same portion of the screen. He does this simply by decentering the two lenses, that is by moving them slightly inwards towards one another; they will then of course act as prisms as well as lenses, and deflect their images until they overlap.

The biophantoscope which Mr. Rudge is now making is in the form of a cylinder about eight inches in diameter, and four or five inches deep; on its front are six lenses mounted in a circle, and capable of being shifted so that they may be decentered to the required degree. Inside will be a carrier in which to fix the disc-shaped lantern slide, which will have six pictures upon it, one behind each lens. These pictures will be a series of six instantaneous photographs of some moving object, and will be made from a negative taken in this very machine, which can thus be used as a six-eyed camera. In using this improved biophantoscope the light, instead of merely being shifted from side to side, will be swung round on a ball and socket joint, so as to alternately illuminate the various portions of the slide, and throw each picture in turn upon the screen. The great point, as has been already said, is the fact that the various pictures are all thrown on exactly the same portion of the screen, and it is upon this and on the continuity of the image that the effect depends.

## WEST SURREY EXHIBITION.

THE fourth annual exhibition of the above Society was held on Thursday, Friday, and Saturday last at St. Mark's Vestry Hall, Battersea Rise. A large number of members sent in work for competition, making a good show of pictures of a higher standard than in any previous year. Between 600 and 700 persons visited the exhibition during the period it was open. Six classes were

formed for competition, and the awards given by the society were adjudged to the following by Messrs. Davison and Winsford:—Class 1 (landscape): 1st, Mr. A. R. Berry, for his photograph of "The Tower of London;" honourable mention, Messrs. Martin and Graham, for "Gathering Stones" and "A May Tree in Bloom," respectively. Class 2 (enlargements): 1st, Mr. Bond, for "Abbotsford" and "Richard I.," honourable mention, Messrs. Seward, Graham, and Borley, for "Sunset," "Cloud Effect," and "Sailing Boat," respectively. Class 3 (instantaneous): 1st, Mr. E. Swinger; honourable mention, Mr. Graham. Classes 4 and 5: No awards were made. Class 6 (lantern slides): 1st, Mr. E. Swinger; honourable mention, Messrs. Graham and Berry. Amongst the pictures not for competition may be mentioned the following:—A fine group of pastoral views by Mr. Davison; "Sleepy Hollow" and others by Mr. Gale; also many pretty pictures from Mr. Winsford and Mr. Calland, while the Woodbury Co. (Messrs. Eyre and Spottiswoode) sent a good show of their well-known reproductions. A fine collection of apparatus by Messrs. Braine and Son was on view and proved very interesting to most of the visitors. During the exhibition some excellent music was provided under the direction of Mr. Swinger; the artistes being Professor Choveaux, Misses Smith, Messrs. Quarne, Gardiner, Reece, Clark, and others. On Saturday evening Mr. George H. James demonstrated the carbon process to a large and attentive audience. In an annexe, portraits were being taken of the visitors by the Welsbach incandescent gas-light, and had much patronage. The committee are to be congratulated upon the manner in which the arrangements were managed. The first meeting of this Society at its new headquarters (The Library, Lavender Hill, S.W.) will take place on April 20th, when Mr. Calland will demonstrate the "Platinum Toning Process."

**South Manchester Phot. Soc.**—The first meeting of the newly-formed South Manchester Photographic and Lantern Society was held on the 28th ult. at the Longford Lecture Hall, Stretford. Mr. W. I. Chadwick, the chairman, stated the object and scope of the society. He said photography from first to last was an amateur's art-science. All the important discoveries in photography had been made by amateurs and freely given to the world. He would not say that ability was lacking amongst professional portrait photographers, but they held photography from another standpoint. It was to them a business, and in many cases there was a good deal more business than photography, about their productions. It was, however, in experimental research, original contributions to the science, and in landscape photography, that amateurs shine with a lustre far more brilliant than their professional brethren. Many amateurs were engaged in other matters during the daytime, and had only the opportunity of interchange of ideas and communications of kindred experiences in the evenings; and it was to meet this object that the South Manchester Society had been formed. There were other societies in Manchester, and it was not intended to compete with any of these. There were a considerable number of amateurs living on the south side of the city who preferred a meeting place nearer home, and it was not intended to extend the membership to an unlimited extent, as smaller societies have oftener proved to meet the object more efficiently. Another great inducement in favour of Stretford was the magnificent accommodation afforded by the rooms, with conveniences such as few photographic societies in the world can boast of. They have been generously placed at the disposal of the society by Mrs. Rylands. The meetings will take place monthly, with technical or instruction meetings and popular or exhibition meetings alternately, and to the latter members may invite friends. There will be outdoor meetings during the summer months. The management of the affairs of the society is vested in the hands of the officers and members present at the monthly meetings. Thus every member has an equal voice and vote as regards the interests of the society. A library has been started, and an enlarging apparatus of the most perfect kind has been presented to the society for the use of members at their own homes; and if the support is accorded to the society which is hoped for, there are other possibilities in the near future. The annual subscription has been fixed at ten shillings, but for members joining after the February meeting the subscription will be five shillings for the first half year. The honorary secretary, Mr. M. W. Thompstone, Beaufort House, Brooklands, will supply any further information to inquirers. Mr. Chadwick afterwards showed a large number of photographs made from negatives taken by himself during the past year. He took the members through some of the finest scenery that we have in England, including scenes in the Isle of Man, Isle of Wight, Windsor Castle, Dovedale, Chatsworth, Haddon Hall, Cheshire, concluding with some very beautiful views of the museum at Peel Park.



## Societies' Meetings.

**Aberdeenshire.**—A meeting was held on the 29th ult. Mr. W. Todd Moffatt, the President, occupied the chair, and there was a large attendance. An interesting paper by Mr. John Milne on "Carbon Printing" was read. The process, which was highly recommended on account of the variety of tones it is capable of yielding, its adaptability to various purposes, and its general quickness, was fully described. A practical demonstration illustrative of the method of development after printing was given by Mr. Milne, and the carbon prints thus dealt with were submitted to the inspection of the meeting. The society had under consideration the proposal of the General Committee that premises at 35A, Union Street should be secured by the society, the front room to be used as a meeting place and club room, and the portion of the premises to the rear to be fitted up as a dark-room for the development and fixing of plates. On the motion of Mr. G. J. Scott, o. Bayview, seconded by Mr. Haweis, the recommendation of the Committee was unanimously approved. A proposal as to an excursion on the spring holiday on 2nd May was deferred till next meeting, the members being asked to forward to the Secretary in the interval the names of the places which they thought it would be most suitable to visit.

**Barrow-in-Furness.**—The annual meeting was held on the 29th ult. Mr. A. Bletchynden, the Chairman of the section, presided. The annual report was submitted and passed. The following were elected into office for the coming year:—Mr. A. Bletchynden Chairman, Messrs. W. Dunlop and Weston Vice-Chairmen, Mr. John Redhead Secretary, and Mr. Carless Assistant Secretary.

**Bedford and District.**—The 29th ult. was a lantern night, when the AMATEUR PHOTOGRAPHER Prize Slides were shown by Mr. Kirby, with the oxy-hydrogen lantern. The President (Deputy Surgeon-General A. Beaman) presided, and there was a good attendance of members. Much of the work exhibited was of a very high quality, and afforded great pleasure to all present.

**Cleveland.**—An ordinary meeting was held on the 29th ult. at Middlesbro', the President, Mr. J. C. Dobbs, in the chair. Eight members entered prints for the competition in bromide work, the first place being awarded to Dr. W. W. Stainthorpe for a whole-plate, toned, bromide on Eastman's extra rapid paper; the second to the Hon. Secretary (Mr. J. J. Hallam), while Messrs. Jobling and J. E. Ellam tied for the third place. Some discussion on bromide printing followed.

**Cornish (Camera Club).**—On the 29th ult. a demonstration of lantern-slide making was given by the Hon. Secretary, Mr. H. Tonkin. Thomas's plates were used, and by varying the exposures different tones were obtained.

**Croydon (Camera Club).**—On the 28th ult. lantern night for members' slides. Some unusually fine ones were contributed by Messrs. Bray and Oakley, besides others of full merit shown by Messrs. White, Neeves, and others. Mr. Carden brought up a series of enlargements toned by the uranium process, which were eloquent exemplars of the artistic enhancement which the process affords. A set of members' slides was selected for despatch to the Auckland (New Zealand) Photographic Society. April 4th, special lantern evening at Braithwaite Hall, the President, Mr. H. Maclean, F.G.S., being in the chair. Lieut.-Colonel J. Gale gave a lecture entitled "Rambles, Rural and Pastoral," illustrated by a selection of his slides. The lecture was listened to by a large and representative audience, which viewed the technically correct and artistically attractive slides with the keenest appreciation. Mr. G. R. White officiated at the lantern with his usual ability. April 11th will be devoted to "Hand-Cameras and other Apparatus."

**Croydon (Micro. and Nat. Hist. Club, Phot. Sec.)**—Ordinary meeting April 1st, Mr. J. A. Carter, B.A., in the chair. Mr. Baldock exhibited one of Chadwick's Stereoscopes. Mr. A. J. E. Hill then demonstrated the Cresco-Fylma process for the enlargement of negatives and transparencies without the use of optical appliances. Ferrous-oxalate and hydroquinone developed plates were recommended in preference to pyro-ammonia as being more easily manipulated. Some fine specimens in all stages of enlargement, from quarter-plate upwards, were exhibited, and apparently being free from distortion and loss of density whatever. In conclusion the chairman said that what he had seen that evening fulfilled everything that Mr. Hill had claimed for his process.

**Glasgow.**—On 22nd ult. a monthly meeting was held, Mr. Thomas Taylor (President) in the chair. Mr. R. H. Elder gave a lantern entertainment entitled "Sun Pictures of Switzerland and Italy." There was a good attendance of members and friends. There was a large collection of photographic views thrown on the screen, and Mr. Elder was frequently applauded throughout his interesting lecture.

**Harrington.**—A monthly meeting was held on the 29th ult., the President, T. J. Down, Esq., in the chair. Mr. E. Williams gave a

practical demonstration, "How to Recover Silver from the Waste Silver Paper." After explaining the method used in the manufacture of plates and papers, the action of the light upon the same, he went on to explain the effect of the chemicals in development and toning. He next recovered the silver from the waste. Four new members were elected, Mr. G. J. Brown, Misses Francis and Annie Williamson, and Mr. William Lawson. Mr. H. W. Houghton introduced to the meeting the Cresco-Fylma enlarging solution, and was successful in two attempts. The Chairman announced for the next meeting, the exhibition of prize slides.

**Holborn.**—The fourth annual general meeting was held on 1st inst., Mr. T. O. Dear (Vice-President) in the chair. The Secretary read the report of the Committee for the past year, in which they congratulated the members of the club on the very successful year which had just ended. It was without doubt the most successful through which the club had yet passed. The social events had been excellently attended during the year, while the lectures and demonstrations by various gentlemen had proved excellent. During the summer (?) months the outings proved very successful. The following places were visited:—Waterlow Park, Pinner, Purfleet, Radlet, Broxbourne, Keston, and Hyde Park. The garden party in July was a notable success, and the week's sojourn to the Southern Counties' Cyclists' Camp at Dorking this year compared favourably with the past. The lantern shows had been numerous, and the report concluded with an expression of the regret of the Committee at the loss which the Club has sustained in the retirement of Mr. Smith, the late Hon. Secretary. The Treasurer read a statement of the income and expenditure of the Club for the year ending March 31st, 1892, showing a net balance of £15 16s. 2d. The reports having been adopted, various alterations in the rules were proceeded with. The subscription was raised to 10s. and the entrance fee abolished. The officers and Committee were then elected:—President, Mr. A. Horsley Hinton; Vice-Presidents, Messrs. Fred Brocas, S. T. Chang, E. Clifton, T. O. Dear, D. R. Lowe; Hon. Secretary, Mr. F. J. Cobb; Assistant Hon. Secretary, Mr. Herbert Thompson; Hon. Treasurer, Mr. Albert Bell; Librarian, Mr. J. Brittain; Committee, Messrs. E. H. Bayston, A. T. Ebsworth, A. J. Golding, A. Hodges, F. Knights, J. Stevens, H. West. Ten members on Saturday last visited the Victoria Docks, and went on board H.M.S. Grafton, a new war vessel which is being built in the docks. The Abbey Mills Main Drainage Works were also visited.

**Huddersfield.**—On the 24th ult., Mr. W. H. Charlesworth in the chair, a very pleasant evening was spent with the AMATEUR PHOTOGRAPHER Stereoscopic Prize Slides, after which the Secretary handed round samples of Jacoby's collodion paper forwarded by Mr. Otto Scholzig.

**Leigh.**—The first lantern evening was given on the 28th ult. before the members of the Leigh Literary Society. The room was crowded in every part, and the evening was very enjoyable. Dr. B. Jones presided. Mr. J. H. Stephen explained the object of the photographic society, and afterwards slides by the members were shown by Mr. W. Drabble. Messrs. Crouchley, Leigh, Syms, Moore, Ward, Mawson, and Hampson's slides deserved special mention. The fortnightly meeting was held on the 31st, Mr. J. H. Stephen presiding. Mr. T. L. Syms gave a paper on "Portraiture," a discussion followed, Messrs. Williams, Leigh, Moore, and Crouchley taking part. Messrs. Lowe, Freeman, W. Tunnicliffe, J.P., Joseph Jones, and R. B. Mawson were elected ordinary members. Mr. T. Haddock was elected Treasurer, in place of Mr. E. A. Williams who is leaving the district.

**Leith.**—A meeting was held on 29th ult., Mr. W. M. Smith, Vice-President, in the chair. The principal business of the meeting was the reading of a paper by Mr. Pitkethly on the new developing agent, "Paramidophenol," which he said, in its action was very energetic, and yielded a negative very clean and thin but remarkably full of detail. During the reading of the notes, Mr. Pitkethly handed round a variety of negatives, bromide prints, and lantern plates, all developed with Rodinal, and which clearly showed the advantages and disadvantages of it as a reagent.

**Leytonstone.**—On the 30th ult., Mr. F. Wates in the chair, Mr. D. G. Riddick demonstrated "Platinotype," using the hot-bath process to develop prints printed by himself and Mr. R. Thiel during the day. He proceeded exactly on the lines advised by the Company, and was eminently successful. All the members who were unacquainted with the process were charmed by its simplicity and artistic results. Some little discussion ensued.

**Lincoln.**—The adjourned meeting took place on the 26th ult., Dr. Stott presiding. Thirteen new members were proposed and duly elected, after which the proposed rules were subjected to criticism and passed. Arrangements were left to the Committee and officers to arrange a programme for the opening meeting. It was decided to meet twice a month during the winter months, and to arrange outings for the summer.

**Liverpool.**—The third ordinary meeting was held on the 31st ult., the President, Mr. W. Tomkinson, in the chair. Three new members



were elected. Mr. E. M. Tunstall introduced the subject of the "Lantern Mission, What it is, and What it may become." In a few well chosen words the speaker briefly referred to the history of the movement, which was already supported by some of the best photographic workers, and pointed out the advantages that were to be derived by members of such an organisation, as well as the beneficial work which they might do for others at the same time. The next subject of interest was the discussion of two alternative schemes for new club-rooms. A copy of the plans was in the hands of each member (having been prepared free of cost by two of the members), and after full discussion it was unanimously decided to adopt the scheme recommended by the Council, provided the premises could be obtained on satisfactory terms. Mr. Fred Anyon then gave his lecture on "Art in Relation to Photography," illustrated by lantern slides. The lecturer first emphasised the distinction between *taking a photograph* and *making a picture*, pointing out the general rules of composition, and showing how far they might be applied to photography, and then proceeded to illustrate his meaning by throwing upon the screen photographs of the same scene taken from an artistic and an inartistic point of view. Many of the pictures were Mr. Anyon's own work, and proved him to be well qualified to give advice upon the subject he had in hand.

**Polytechnic.**—On the 29th ult., Mr. Quintin Hogg in the chair, Captain Gladstone, Secretary of the Lantern Society, was kind enough to deliver his lecture on "Westminster Abbey" before the members of the above society and their friends to the number of about one thousand. The lecturer, who explained that the history of the Abbey was practically the history of England, showed many of the chapels and tombs in the Abbey, giving such architectural and historical notes as were necessary to explain the pictures on the sheet. The lantern slides to the number of about fifty were all prepared by the lecturer on gelatine plates from his own twelve by ten negatives, the exposures for which in the Abbey had varied from one or two seconds to a couple of days. They were noticeable for their brilliancy, softness, and vigour of detail, these qualities being specially shown in such exquisite architecture as Henry VII.'s Chapel.

**Pudsey and District.**—On the 29th ult. a meeting of above society was held, Dr. Hunter, President, in the chair, to receive the report of the judge, Mr. A. R. Dresser, in the Members' Lantern Slide Competition. Ten competed (six slides each), and the prizes consisted of silver and bronze medals. 1st, J. Barrow; 2nd, J. Goodman; 3rd, W. S. Crowther. A hearty vote of thanks was passed to Mr. Dresser for his great kindness in judging the slides.

**Richmond.**—On the 1st inst. the last lantern night of the season, Mr. Ardaseer officiated as lanternist, and slides were shown by Messrs. Kelsey, Arthur Hunter, Nevill, St. John Hunt, Davis, Cembrano, Ardaseer, and Ramsay.

**Rochdale and District.**—A capital meeting was held on 28th ult.

Mr. J. H. Crabtree in the chair. Mr. Leach gave a very interesting paper, "A Day at Ingleton," illustrated with about twenty-four prints of the various falls and glens in this pretty district. Mr. J. H. Hoyle gave a practical lesson on the "Carbon Process," developing six half-plate views, the members expressing their admiration at the excellent results which could be got. The Chairman had on view a set of four lantern slides, by which he has recently carried off a silver medal. Slides were also shown of Preston, by Samuel Ingham. Arrangements were made for the summer excursions, the places to be visited being Bolton Woods, Worsley, Hardcastle Craggs, Southport, along with several other places in neighbourhood. It was announced by the secretaries that a set of AMATEUR PHOTOGRAPHER competition prints would be on view at the next meeting, April 12th.

**Sydenham.**—A meeting was held on 29th ult., the President in the chair. Mr. G. Austin read a paper on "The Hand-Camera and its Use." The principal points of this sort of camera were, in his opinion, lightness, an ever-set shutter, a rapid lens, etc. He found that rapid Isochromatic plates worked as well as any, and he intended to use them in the future. The camera he used was Adams' new Ideal, which he found answer every purpose. During the evening members had the opportunity of examining Adams' Bino-cular Pantoscope, with the chromoscope attached, which certainly gave some very beautiful sunset effects.

### SOCIETIES' FIXTURES.

- April 6.—BLACKHEATH.  
 " 6.—ELIZABETHAN.—Miscellaneous pictures.  
 " 6.—ISLE OF THANET.—"London to Niagara."  
 " 6.—LEYSTONSTONE.—"Silver printing."  
 " 7.—LEIGH.—"Processes," by J. Weston.  
 " 8.—HOLBORN.—Annual distribution of prizes.  
 " 9.—HOLBORN.—Official outing to Hampstead.  
 " 11.—GRAPHIC.—"My Holiday Trip," by Mrs. Allen.  
 " 11.—DARLINGTON.—"Silver Printing," by E. Ensor.  
 " 12.—CORNISH.—"Carbon Printing," by H. Tonkin.  
 " 12.—ROCHDALE AND DISTRICT.  
 " 12.—FAIRFIELD.—"Artistic Side of Photography."  
 " 12.—BLACKHEATH.—"Demonstration of Carbon Printing," by the Autotype Co.  
 " 13.—PUTNEY.—"Mounting," by A. H. Hinton.  
 " 13.—COVENTRY.—"Mounting and Finishing," by A. B. Clarke.  
 " 14.—DEWSBURY.—"Carbon Printing," by G. Kilburn.  
 " 14.—HACKNEY.—"Isochromatic Plates," by J. Howson.  
 " 15.—RICHMOND.—"Retouching and Finishing," by E. Morgan.  
 " 15.—BRISTOL.

## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### QUERIES.

5580. **Kodak.**—Would any kind readers let me know their opinion of the Kodak?—T. H. T.

5581. **Roller Films.**—Do roller films answer as well as glass plates, and are they easily developed?—T. H. T.

5582. **Film Negatives.**—Do film negatives when packed on top of each other "come to grief," and do they print well afterwards?—T. H. T.

5583. **Toning.**—Will someone kindly tell me why I can tone vignette portraits to a fairly rich black, but utterly fail in giving landscapes or ordinary portraits any colour beyond a dull slaty grey? I use the following bath:—

|                  |    |    |    |        |
|------------------|----|----|----|--------|
| Borax            | .. | .. | .. | 60 gr. |
| Chloride of gold | .. | .. | .. | 1 "    |
| Water            | .. | .. | .. | 10 oz. |

—A BEGINNER.

5584. **Printing.**—I cannot understand why some of my negatives print a dark chocolate in ten minutes, while others in the same time print a much more reddish colour. Would some reader kindly help me?—A BEGINNER.

5585. **Films.**—Will any one kindly inform me if film are as easy to work with as plates, and as reliable for a beginner? Also if they are able to be used in a dark slide the same as plates?—FILMS.

5586. **Lens.**—Can any reader recommend a good half plate wide-angle lens at about a guinea? Is Lancaster's wide-angle 15s. a good one? It is to be used with Instantograph.—WIDE-ANGLE.

5587. **Developer.**—Can the proportions of the following developer be improved upon for developing instantaneous pictures, likely to be under-exposed—

Thomas's extra-rapid plates used—viz.: Pyro, 2 gr. (used dry); washing soda, 13 gr.; bromide of potassium, 1-3rd gr.; per ounce of solution. And if so, what method should be adopted to get the best result?—W. H.

5588. **Lowestoft.**—Where are the best bits of scenery close to Lowestoft and Yarmouth?—W. H.

5589. **Printing.**—For what subjects are the following papers respectively best adapted?—Ordinary silver albumenised paper, bromide Ilford, printing-out, aristotype, platintype, and carbon?—W. H.

5590. **Painting Enlargements.**—Would any reader kindly inform me if bromide enlargements require any special treatment to "take on" oil or water colours; or, if special paints are necessary, where may they be obtained?—PAINTS.

5591. **Glass Cutter.**—Will any reader kindly tell me where I can obtain the American glass cutter which is sold at about 6d. each?—H. B.

5592. **Focuser.**—Will any reader tell me if there is any sort of focuser which can be used without a cloth whatever; also where it can be obtained, and the price?—FOCUSSEER.

5593. **Films.**—Will any reader kindly inform me if films are as good and as easy to work for a beginner as plates, as their unbreakability would be a great boon to me on my machine? Can they be used as ordinary plates are in the dark slide?—FILMS.

5594. **Collodio-Bromide Emulsion.**—Would anyone give me a reliable receipt for collodio-bromide emulsion for lantern slides?—PYROXYLINE.

5595. **Photographing at the Zoo.**—I have a permit to photograph at the Zoo. Would any reader kindly tell me what is the best kind of camera to use? or any other hints would be appreciated.—LEO.

5596. **Dark Slides.**—I have just been out taking several views of different places, and on developing the plate I have found a falling off at the two end corners like one would see very often in an old wet plate where the shutter fits down in the dark slides. The lens covers the plate well, which is a single landscape. At first I thought the light got in and fogged the two corners, but the slides seem to be light-tight.

Could any reader help me out of my difficulties? I should be much obliged if so.—CAMERO.

5597. **Lantern Slides.**—In making lantern slide with camera, using Wray W.A. lens (half-plate) with full aperture and Ilford Alpha plates, what length of magnesium ribbon ought I to burn behind a fairly dense negative?—TARA.

5598. **Tags.**—The leather tags of my dark slide have come out. Should like to know if I could replace them, and in what way.—WILLIE.

5599. **Pinholes.**—Should like to know the cause of pinholes in plates which have previously been dusted before putting in dark slide.—WILLIE.

5600. **Printing.**—Should like to know if there is not any possible way of getting letter-print off untuned prints.—WILLIE.

5601. **Tubing.**—Would water passed through a tube which has been used for gas affect a plate?—ALPINE.

5602. **Burnishing.**—Will some one tell me if a photograph should be passed through a burnisher wet or dry?—ALPINE.

5603. **Scorpion Camera.**—Can any of my fellow readers tell me if the Scorpion half-camera (American Camera Company's) will take good instantaneous pictures?—HARD UP.

5604. **Opalines.**—How are opalines made? Is the photograph queezed on to the opal glass, and then backed, or how? Will some kind reader inform me?—I. C. H.

5605. **Williams and Mayland.**—I am anxious to obtain the address of the firm of photographers who, some years ago, bought up the stock of Messrs. Williams and Mayland.—D. K. A.

5606. **Lamp.**—Could any of your readers advise me how best to light my dark-room on the cheap? I have a three-cornered ruby lamp, with oil burner, and it's such a bother to make burn. It often pops out, and when it is lighted it is so dim I cannot properly see. I have had holes bored in top and bottom, but of no avail; have also tried to burn candle in. Should be very grateful for any help.—TRIX.

5607. **Edwards' Films.**—I should be glad to have any reader's experience of the speed, working, and



any other details worthy of notice in Edwards' Isochromatic films, and also what form of hydroquinone developer is good.—PHOTO.

5608. **Substitute for Ammonia.**—At present I am using 10 per cent. three-solution pyro developer, but as I am unable to stand the fumes from the ammonia I should like to know a really good substitute, also 10 per cent.—PHOTO.

5609. **Changing Bag.**—Would one thickness of best black Italian cloth do for a changing bag, taking every precaution against direct sunlight?—PHOTO.

5610. **Film Slides.**—Are there any dark slides made specially for carrying films (quarter-plate); and if so, where to be had?—PHOTO.

5611. **Distant Views.**—What lens is required to take distant views, say half a mile or mile off? Will the ordinary camera do—one that will rack out to about 21 in. to screw the lens in? Information will be thankfully received.—I. C. R.

5612. **Hand-Camera.**—Can anyone tell me of a good hand-camera (quarter-plate), without dark-slides or changing bags? I should prefer one that I could have fitted with my own lens, and costing about £3 or less.—IGNORAMUS.

5613. **Flash Work.**—What are the most suitable plates for flash-light portraiture, and how would their rapidity and their development compare with that of Thomas extra rapid?—BAYARD.

5614. **Methylated Spirits.**—Is methylated spirit, as now sold, fit for making mountants, for drying negatives, or for mixing with developers?—BAYARD.

5615. **Toning Bath.**—Why does Ilford formulae sulphocyanide toner turn purple? If from precipitation of the gold, can this be prevented?—BAYARD.

5616. **Books.**—What is the cheapest reliable work on the chemistry of photography, and on lenses?—BAYARD.

5617. **Blisters.**—Will some reader kindly inform me how to prevent prints which have been toned in gold bath and fixed with hypo, from becoming blistered all over during the process of washing?—IGNORAMUS.

5618. **Lenses.**—What are the four most useful lenses for quarter-plate camera?—R. A. W.

5619. **Hand Camera.**—Can anyone tell me of the capabilities of Lancaster's "Rover" hand-camera? Is it capable of good work?—IGNORAMUS.

5620. **Lenses.**—Which is the better and more useful—Lancaster's W. A. Rectigraph, or the Combination Rectigraph by the same maker?—X. Y. Z.

5621. **Battle Abbey.**—Is permission granted, upon application, to photograph in Battle Abbey, and if so, to whom should I apply? Permission is not given at the Abbey, but possibly the steward would grant it. Can any reader give his name and address?—A. W. COOK.

5622. **Cresco Fylma.**—Will some reader who has used this say if thin negatives should be intensified before or after enlarging? Do they enlarge as well after intensification with bichloride of mercury and ammonia?—A. W. COOK.

5623. **Opalines.**—What varnish or size is used to put gold leaf on the margin of the backs of opalines? so as to have a bright burnished appearance?—A. W. COOK.

## QUERIES UNANSWERED.

April 1.—Nos. 5555, 5565, 5568, 5570, 5574, 5575, 5576, 5577, 5578.

## ANSWERS.

5482. **Watkins' Exposure Meter.**—After six months' use of this instrument I can certainly recommend it as reliable and good. The average time is certainly under 30 sec.—OSIRIS.

5492. **Stained Negative.**—Treat the stained negative with—

|                           |        |
|---------------------------|--------|
| Ferric chloride .. .. .   | 50 gr. |
| Bromide of potassium .. . | 30 "   |
| Water .. .. .             | 4 oz.  |

Soak for a minute or two and then wash well, and redevelop with a weak ferrous oxalate developer.—OSIRIS.

5539. **Varnishing.**—There is no varnish that can be put on with a brush equal to French polish applied with a rubber. The nearest approach to it would be to add a small quantity of resin to French polish, and use it with a soft camel-hair brush, putting on a very little at a time. At least six coats would be required on new wood. Care should be taken that one coat is dry before the next is applied. The work should be rubbed smooth with "flour" glass paper between each two coats and before the last. On no account should oak or similar varnish be used for any part of a camera or stand or anything that has to be handled. French polish can be purchased at any oil shop.—EXPERT.

5540. **Amlens, Beauvais, Rouen.**—No permit is necessary to photograph in the streets of above places.—OSIRIS.

5543. **Mountant.**—Theoretically, Le Page's or any other kind of glue is the best mountant that can be used, because it does not "cockle" the paper or card. But there is so much difficulty attending its use that "Marvel" had better stick to paste which he must make for himself. The various kinds of paste sold by stationers of necessity contain alum or acetic acid, or some other ingredient to prevent decomposition, and these will very likely cause the photograph to

fade in time. Recipes for paste given last week.—EXPERT.

5544. **Photographing in Paris.**—There is no restriction as to photographing in Paris, or its suburbs, so long as you do not go near the fortifications, or include them in your view. *Dejeuner* time, i.e., about noon, is a very good hour for working, as there are fewer people about. In Paris itself, the Louvre (four plates), Gardens of the Tuileries (*quantum suff.*) Place de la Concorde (after 11 a.m., when fountains commence), Church of the Madeleine, Palais de Justice, Place de l'Opéra, are all worth photographing. Short-focus lens occasionally desirable, especially in such cases as Notre Dame, etc. In suburbs, Bois de Boulogne, Jardins d'Acclimatation, Versailles, etc., and the views on the Seine will keep you fully occupied for some time. Light is actinic, so give rather short exposures.—DUNDRUM.

5554. **Ilford Developer.**—The purpose of the nitric acid is to preserve the developer. You do not carry development far enough, or else the accelerator is added too quickly.—OSIRIS.

5556. **Renovating Background.**—Boiled or raw linseed oil will not permanently improve a faded background. Either of them, if applied, would be a long time drying, and always catch the dust. The only thing to be done is to carefully touch up the faded parts with the proper tints, using plenty of turpentine in the colour to ensure drying and to avoid any appearance of thinness.—EXPERT.

5557. **Mountant.**—Directions were given in this column on March 18th for making a good mountant. Prints can be prevented from curling up by damping them on the face side, but with good paste this is unnecessary.—EXPERT.

5558. **Fixing Solution.**—There will be no action on the plates from keeping fixer in a lead tray.—OSIRIS.

5559. **Substitute for Sodium Hyposulphite.**—There is no substitute for hypo.—OSIRIS.

5560. **Permits.**—No permit is necessary, but it is advisable to keep away from all fortifications.—OSIRIS.

5561. **Holland and Belgium.**—There are no restrictions, provided you keep away from forts, etc.—OSIRIS.

5562. **Finder.**—Take the finder to pieces and alter the angle of the looking glass, or else get someone (Fallowfield did mine for me) to adjust the finder for you.—OSIRIS.

5563. **Removing Mildew.**—This is a very ticklish job to do for an amateur; far better send it to a regular cleaner.—OSIRIS.

5564. **Removing Ink Stains.**—Try ordinary salts of lemon, to be had from any chemist.—OSIRIS.

5566. **Lantern Slides.**—Try Newton and Co., 3, Fleet Street, London; Negretti and Zambra, Holborn Viaduct, E.C.1; C. E. T. S., 9, Bridge Street, Westminster, S.W.—PETER.

5567. **Dishes.**—Warm the ebonite dish before the fire or over the gas, and you can then make it into any shape you please.—W. E.

5571. **Lantern Slides.**—There are no such slides in the market. Tylar sells an emulsion, and Wall's "Dictionary" would give you formula.—OSIRIS.

5572. **Glueing Bellows.**—To prevent glue from getting too hard when applied to leather or cloth, treacle should be added to it in the proportion of 1 to 10. I do not know what adhesive A. B. M. uses, but in my own work with leather I avoid glue altogether, and use thin paste.—EXPERT.

5572. **Glueing Bellows.**—Use best pale "Scotch" glue (or bookbinders' glue) made rather thin, or "mucilage," which is perhaps cleaner and more pliable. I have experienced the same difficulty. First crease the whole of the bellows all over, lay your cloth over this and crease again; whilst damp, glue the bellows together on the underneath side, pull out bellows, and glue down; when dry, put the bellows close together and let remain all night, in the morning the whole will be quite dry and hard; crease thoroughly on all occasions.—F. W. WALTER.

5573. **Plates for Hand-Camera.**—Ilford rapid (white label) plates are best for hand-camera, also Thomas' extra rapid are excellent. The developer:—Make a solution of 2 oz. common soda, 20 oz. water; when dissolved, take 2 oz. and add 4 gr. dry pyro (or 20 minims pyro solution) for quarter-plate. Bromide not necessary. Develop to full density, and clear with a solution of

|                       |       |
|-----------------------|-------|
| Alum .. .. .          | 1 oz. |
| Citric acid .. .. .   | 3 "   |
| Sulphate of iron .. . | 2 "   |
| Water (hot) .. .. .   | 10 "  |

When dissolved and cool, take for quarter-plate 2 oz., and let plate remain in this for two or three minutes; if very dense, five minutes.—F. W. WALTER.

5573. **Plates for Hand-Camera.**—Use Ilford special rapid; ordinary too slow. Develop with eikonogen.—PETER.

5579. **Developing Eastman's Films.**—I have found the Eastman Company's latest formula the best for developing their rolling film. It is as follows:—

|                       |       |
|-----------------------|-------|
| No. 1.                |       |
| Sulphite of soda .. . | 6 oz. |
| Hot water .. .. .     | 32 "  |
| When cold, add—       |       |
| Pyrogallol acid .. .  | 1 "   |

No. 2.

|                        |       |
|------------------------|-------|
| Carbonate of soda .. . | 3 oz. |
| Carbonate of potash .. | 1 "   |
| Water .. .. .          | 32 "  |

For use, take one part each of No. 1 and No. 2, together with two parts water. Restrain in case of over-exposure:—

|                        |       |
|------------------------|-------|
| Bromide of potash .. . | 1 oz. |
| Water .. .. .          | 6 "   |

—C. E. F.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED : AM : PHOTO.

J. DUMAS.—(1) Spoilt by the cutting off of end of bridge, and wants some urchins fishing to relieve the monotony and give life. (2) Here again some figures in the near foreground would have improved it. (3) Good. (4) A little too dark on the right-hand side. (5) Wanting in brilliancy, and a little too much foreground. (6) Flat, and wanting in brilliancy; shows, too, irregular stains.

E. W. MALE.—You cannot do better than use Vever's anti-halation paper backing, which is very easily applied. Add sufficient ammonia to cause a slight permanent precipitate on shaking, then filter and use. Carbonate of soda might be used, only you would have to test the bath for alkalinity. Make a mask of orange paper, and cover the landscape when developed, then put on your cloud negative and expose by a match, and then re-develop; or you can do this before developing the landscape, and thus develop both clouds and landscape together.

W. E.—We gave all the necessary data for the calculation of your required answer on p. 241 and p. 249. November 29th 1891.

G. S. A.—You would infringe no patent. There are some people who want us to read the AMATEUR PHOTOGRAPHER for them, and tell them one week what was said the week before, but we don't mind that at all.

E. D.—Perken, Son and Rayment, Crouch, Taylor, Taylor, and Hobson, Beck, Dallmeyer, Swift, Wray, or any optician would supply one. They are rather expensive, requiring as they do absolutely exact grinding to obtain plane surfaces. You might possibly get one second-hand by writing to Lawley, of Farringdon Street. Send your address on, and we will write you more fully.

BAYARD.—Try a solution of ferricyanide of potassium 10 gr., sulphocyanide of ammonium 1 oz., water 5 oz., and immerse the prints in this till reduced sufficiently, or you might convert the image or part of it into chloride by the action of cupric chloride, and then dissolve the same by hypo. If the prints are not toned, you can develop them as shown by Valenta's paper on p. 251, March 25th, 1891. You cannot destroy the pink colour entirely without reducing prints; try cupric chloride weak, and then develop the image.

STIC.—Yes, we can allow an extension of time.

COMPETITOR.—You do not send us any particulars as to the rules and regulations, but provided an exhibitor does the focussing and directs somebody else to expose a certain time, and then develops the plate himself and prepares the print or slide, he is, we think, allowed to send that print or slide in as his own work.

A. G. TURNER.—(1) Utterly spoilt by the vignetting. The stain is due to hypo. If you do not vignette and just sun down the glaring white clothes, it would be a fine bit. (2) Good, but the water is too white; sun it down. (3) Taken the wrong way of plate, and wants atmosphere. (4) Printed a little too deep. (5) See note to No. 1. Your matt surface is not quite perfect, try matt sheets of celluloid instead of ground glass. (6) Technically good, but wanting in artistic merit. (7) The fence in the foreground is offensive, the camera should have been the other side of it; technically very good. (8) Spoilt by the movement, otherwise very good. 8, 7, 5, and 4 are up to standard. The tones are alright, and can be varied by cutting short the stay of the prints in the toning bath.

C. WILLARD.—The distance of separation of lenses is not a fixed quantity, but is usually determined by the optician, so as to give a fairly flat field. You may also determine the distance by deciding upon what focus you want the R.R. to be; thus multiply the foci of the two combinations together, and divide by the sum obtained by adding them together, and subtracting the distance of separation, from this you may assume any distance of separation, and then calculate out the focal length, which, if not what you want, may be altered by increasing or decreasing the distance. The following may help you: In Dallmeyer's R.R. the diameter of lens is 1.4 in., the distance 1.5. Steinheil's Aplanat, distance between lenses of 9.5 R.R.



1'7 in. A French R.R., diameter 1'3 in., distance 1'5 in.; English lens, diameter 1'6 in., distance 1'4 in.

**EGGERS.**—The fault of your fuzzy pictures may be either that the plane of the sensitive film is not in exact register with the focus of the lens, or else your camera is shaken by the shutter. To test for the former fix the camera firmly on a table, and focus sharply a black and white subject—for instance, one of our advertisement pages—now insert the roll-holder, and expose with the cap, and on development you can easily see whether the two planes coincide. To test for the second, proceed as before, only expose with the shutter.

**BICK.**—Enamel collodion may be had from any photographic dealer; Sharp and Hitchmough, or Newton's, of your city, would supply. The easiest method of obtaining a matt surface with gelatino-chloride paper is to use Ohernett's matt-surface paper, or else to squeegee ordinary chloride paper to matt celluloid sheets.

**F. A. W. WHITMORE.**—The stain certainly had more the appearance of iron than anything else, but there seems to be a spot of some kind as a centre or starting point, and it might therefore be some impurity which had settled on the film whilst damp; it was too small to test in any way. A ten per cent. solution of oxalic acid instantly removed the stain.

**PETER.**—The light is certainly far superior to any oil lamp, but it is a little bother to keep regular, because of the blowing arrangement.

**E. HAMILTON.**—We have no information how to make cardboard dark slides.

**WM. SEATON (Canada).**—First of all let us inform you that you made up your developer wrongly; you should have first dissolved the sulphite and then the eikonogen. The stains may be caused by three things: first from the use of stale paper, secondly by not using enough bromide in the developer, and lastly, and most likely, by dirty dishes, or dishes which had been used previously for iron, pyro, or hydroquinone. Eikonogen requires absolutely clean dishes. The print is wanting in brilliancy, which could have been remedied by a somewhat shorter exposure or the use of more bromide, and there is hardly enough interest in it to score artistically. We have far worse prints in our competitions, however. Always glad to try and help you.

**W. HIGH.**—Over-exposure and development was not carried far enough, and have you not been printing in the sun? Intensify your negatives with mercury and ammonia, and print slowly under green glass or tissue paper on gelatino-chloride paper.

**OMEGA.**—

|                            | Sol. 1. |        |
|----------------------------|---------|--------|
| Hydroquinone ..            | .. .. . | 40 gr. |
| Eikonogen ..               | .. .. . | 120 "  |
| Sodium sulphite..          | .. .. . | 480 "  |
| Citric acid..              | .. .. . | 20 "   |
| Distilled water ..         | .. .. . | 20 oz. |
|                            | Sol. 2. |        |
| Potassium bromide ..       | .. .. . | 5 gr.  |
| Sodium carbonate (pure) .. | .. .. . | 60 "   |
| Sodium hydrate ..          | .. .. . | 30 "   |
| Distilled water ..         | .. .. . | 20 oz. |

For use mix in equal parts. (3) Half an inch too much foreground, too black on the left, should have been taken the other way of plate. (1) This would have made a better picture taken the other way of plate, the right-hand bank is too black; shade this in printing. (2) Good. (4) Very bad, the water is far too white, and the paper shifted in the frame, and there is nothing in the thing at all. Nos. 1 and 2 are up to competition standard. You are under-exposing rather.

**T. W. TYTHERLEIGH.**—Wall's "Dictionary of Photography" is issued by our publishers, Messrs. Hazell, Watson, and Viney, Ltd., price 2s. 6d. You will find there a brief description of the wet process, or Mawson and Swan's little 3d. pamphlet on this subject treats very fully of the subject.

**S. P. G. D. TAYLOR.**—Probably you could develop 100 quarter-plate bromide prints easily with 25 oz. of ferrous oxalate developer, allowing 2 oz. to every 4 prints, that is pouring out 2 oz. and developing 4 prints one after the other. Assuming that there is 0.576 grammes of bromide of silver in every half-plate, and this is said to be the quantity, and that 80 per cent. of this is dissolved in the fixing bath, that means 460.8 grammes of bromide of silver dissolved; but bromide paper contains far less bromide of silver than plates, therefore if we assume one-third of this quantity right for a quarter-plate print, we should get 153.6 grammes. Now according to the chemical decomposition which takes place, 376 parts of bromide of silver require 744 parts of hypo, therefore if we assume double the quantity of hypo to be necessary, we shall be safe, therefore you will require 1536 by 100 by 2 grammes of hypo = 3072 grammes of hypo, and this is just over the ounce of hypo, therefore 4lb ought to fix 100 prints without difficulty, but to make sure, use 5lb.

**CAMERA.**—There is not much to choose between them, but rather Lancaster's for choice.

**YOUTHFUL ENTHUSIAST.**—(1) Spoilt by over-printing or printing in the sun. (2) An inch too much foreground, shows signs of movement, wants brilliancy. (3) You were too near, and so spoilt a good thing by cutting off the end of church, good technically though. (4) You were the wrong side of the fence, and the tree trunk is too prominent, and the white apron or clothes too staring. (5) Good. (6)

Good. (7) We fail to see here what you took; it is interesting but a mass of foliage without any object of interest, and the too white, detailless tree trunks are hideous. (8) You should have taken this more on the slant; there are now too many straight lines in it, it wants clouds to give it relief, and the foam is far too white, but the luminous transparency of the waves is good. Let us know what developer you are using, your prints give us the impression of its being hydroquinone; the whites are far too white in all your prints.

**GAMMA.**—(1) Why could you not have put your camera straight, and not made the house lean all one way? You should also have put the camera the other side of the fence. Technically it is a very good print. (2) Flat and poor, wanting in brilliancy. (3) Bad, too black and white, the snow is white paper, not snow. Give a longer exposure, and use less iron in the developer. (4) Decidedly better, but bromide properly worked will give you the best print from this negative.

**W. R. P.**—(1) Any bromide lantern plate, such as Fry, Verel, Edwards, or Mawson, but preferably the special photo-mechanical plate. (2) The 12 by 10 R.S. would be the best, because you would be able to use it at larger aperture. (3) Put four wide indiarubber hands round it, one on each side. (4) Eikonogen is the best developer, because it gives a very fine grain deposit.

**BOTANY BAY.**—(1) Surely there is no necessity for you to use such a small stop, but about 5 secs. should, we think, be enough. (2) We have not tried the instrument named. (3) It is impossible to give any idea of the exposure required for oil paintings, as so much depends upon the prevailing colour in the picture; for instance, for a bright Algerian view, with rich bluesky, yellow sands and green cactus required on Saturday with a yellow screen, which is essential for best results, the exposure was 15 min., with f/22, whilst a dark-toned portrait of reds, blues, and greens required, under precisely similar conditions, 40 min. to get out the best rendering of colours, Edwards' medium 150 plates being used, and at 3 p.m. Your only plan is to make some experimental exposures, using medium rapidity plates and yellow screen. (4) We have written to the maker, and hope to get his reply this week, and will let you know.

**D. K. ANTROBUS.**—We have inserted a query, but you are more likely to obtain the information from the *British Journal of Photography*, 2, York Street, Covent Garden, W.C., the professional paper.

**EIKONOGEN.**—1. The eiko cum hydro. will keep three or four months without difficulty. It may be used when of a deep-red colour without any harm, and works well for bromide paper in this condition. 2. Stale paper is the cause of your trouble. 3. The cupric bromide merely turns the image a pale yellow, and on exposing this to daylight for some time, say five minutes, the eikonogen ought to redevelop it a warm colour. We have never found any difficulty. We can suggest no reason for your failure. 4. We have found that 60 sec. is not too long exposure for this work, our aim always being pl. nty of detail and thin negatives; probably, however, 40 sec. is the ordinary run.

**TRIX.**—You can squeeze your prints down to glass and strip with a fine polish, or coat with enamel collodion and strip with a looking-glass polish, or use encaustic paste on the mounted and finished print.

**A. G. A. PATTERSON.**—We should prefer No. 2 camera, but there is not a pin to choose between 1 and 2 lenses.

**J. J. HALLAM.**—Your report would be too late. **PHOTO.**—There is not the slightest difficulty in working the films named; they are very rapid, easy and clean to work, sufficiently stout to lay flat in the dark slide with the aid of cardboard. They will work with almost any form of developer, and the special one made by the makers is worth trying.

**BROMIDE.**—The single wick lamp could be used as suggested. There is no work on the subject, but we will send you by post proofs of what will appear if you promise to return them.

**G. RAMSEY.**—The front lens of an R.R. can be used as a landscape lens, and will probably serve also for a building, provided the building does not come too near the edge of the plate. You must, of course, remember that the relative aperture of each stop is halved, and the exposure quadrupled.

**H. F. LINGING.**—(1) No, there is not much likelihood of the small quantity of alum and acid having any ill effects, but they would be apparent by fading and yellowing. (2) You can certainly use the aperture of shutter only half inch, but in this case it is obvious there is very little light let through, and that the whole of the lens is never uncovered at once. If the aperture were twice the diameter of the lens, and a strong indiarubber band used, the exposure would probably be 1-20th sec. You must let us know at what speed the people would be running, and the focus of lens, before we can answer the latter part of question.

**H. J. H. MARSDEN.**—The finders are placed at the corners, so that one may be used for vertical and the other for horizontal pictures; the one finder in the middle can obviously only be used for one position of the camera. The camera strikes us as being a capable, cheap instrument, and quite efficient for ordinary hand-camera work.

**B.**—Apply to H. W. Primrose, Esq., Secretary to Commissioners of Works, 12, Whitehall, S.W.

**SEWILL.**—You cannot do more than obtain copy

same size. From the negative thus obtained you ought to be able to obtain an enlargement in the ordinary way, or by the aid of Cresco Fylma. Probably you are giving too long an exposure, but we could not tell without further data.

## Ladies' Competition.

PRINTS have been received from—

|                             |         |          |    |              |
|-----------------------------|---------|----------|----|--------------|
| Miss King ..                | .. .. . | 8 prints | .. | Grimsby      |
| Miss E. R. Paint ..         | .. .. . | 7 "      | .. | Guernsey     |
| Mrs. S. E. Gaddum ..        | .. .. . | 6 "      | .. | Cheshire     |
| Miss M. I. Hands ..         | .. .. . | 8 "      | .. | Wales        |
| Miss A. Dixon ..            | .. .. . | 6 "      | .. | Essex        |
| Miss A. J. Naunton ..       | .. .. . | 8 "      | .. | Shrewsbury   |
| Miss E. Annesley ..         | .. .. . | 8 "      | .. | France       |
| Miss C. Fawcett ..          | .. .. . | 7 "      | .. | Durham       |
| Miss M. Down ..             | .. .. . | 7 "      | .. | Ilfracombe   |
| Mrs. A. Perkins ..          | .. .. . | 8 "      | .. | Shaftesbury  |
| Misses Bulwer ..            | .. .. . | 7 "      | .. | Italy        |
| Miss M. Watson ..           | .. .. . | 8 "      | .. | Italy        |
| Miss M. N. Henderson ..     | .. .. . | 7 "      | .. | France       |
| Miss E. Bradshaw ..         | .. .. . | 6 "      | .. | Port Neuve   |
| Miss E. M. Pritchard ..     | .. .. . | 8 "      | .. | Buzzard      |
| Miss E. I. Manlove ..       | .. .. . | 6 "      | .. | Chesterfield |
| Miss A. C. Pearson ..       | .. .. . | 8 "      | .. | Dover        |
| Miss M. Acton ..            | .. .. . | 7 "      | .. | Pau          |
| Miss Blurton ..             | .. .. . | 8 "      | .. | London       |
| Mrs. Benyon ..              | .. .. . | 8 "      | .. | Huntingdon   |
| Miss C. M. F. Brockholes .. | .. .. . | 6 "      | .. | Lancashire   |
| Miss Williamson ..          | .. .. . | 8 "      | .. | Widmermere   |
| Miss Niblett ..             | .. .. . | 8 "      | .. | Lebury       |
| Mrs. E. Bain ..             | .. .. . | 8 "      | .. | Italy        |
| Miss L. Candy ..            | .. .. . | 8 "      | .. | Hants        |

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m. and other communications having reference to the Sale and Exchange) column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Background.**—Canvas background, 7 by 8, on roller, suit an amateur, 8s.—T. W. Milburn, Battle Hill, Hexham, Northumberland.

Handsome background representing walk in palm house, fluted oil, 8 by 7, 27s. 6d.—Derrick, 7, Wolsey Road, Teddington.

**Cameras, etc.**—Lancaster's special patent camera, quarter-plate, and leather case, cost 56s., price 38s. cash.—Noel, 61, Newman Street, W.

Lancaster's 1888 Instantograph, quarter-plate, complete, with six metal double dark slides, excellent condition, 30s.; Kershaw shutter, 1½ in., good as new, 10s.—C. 161, Croxted Road, Dulwich.

Full-plate camera, modern pattern, taper bellows, three brass-hund slides with snaps by Park, 47.—Jno. Daniell, Dovedale House, Llanelli.

**Cameras, Lenses, etc.**—Half-plate camera and lens, 15s., rising front.—Alpine, Underhill Road, S.E. 5 by 4 hollows camera, lens, and slide, well made, 21s.—No. 269, office of this paper, 1, Creed Lane, E.C.

Lancaster's half-plate Merveilleux camera, lens, and stand, nearly new, perfect condition, light, suitable for lady and quiet landscape work, also included AMATEUR PHOTOGRAPHERS, 1890 to present time, clean, price 30s.—Bird, Bardwell Cottage, Esher, Surrey.



**Dark Slides.**—Half slides to fit Lancaster's Instantograph or International, 10s.; approval.—T. H. Nizels, Chislehurst.

Dark slides, cash offers near 7s. 6d. each; three halves, new book-forma Instantographs, cash 12s. 6d. each; approval.—Adams, Harold Woods, Essex. [Trade.]

**Hand-Cameras, etc.**—Talmer hand-camera, quarter-plate, only 30s.; Editor's approval.—H. Holt, Conservative Club, Liverpool.

Easter holidays! Facile camera, hardly used, cost 84s., price 70s.—Camera, 15, Stoke Road, Guildford.

Beck's £12 12s. quarter-plate hand-camera with umbrella tripod, £7 7s.—No. 265, office of this paper, 1, Creed Lane, E.C.

Kodak No. 5 folding, in perfect condition, with full spool of exposures, and extra spirit level fitted, great bargain, £5, cost £11 10s.; when new, empty.—Rev. H. Wilder, Sulham Rectory, Reading.

Swinden and Earp's quarter-plate hand-camera, very good condition, £5 7s. 6d.—No. 268, office of this paper, 1, Creed Lane, E.C.

Rouch's Eureka, lantern size, perfect, with case, excellent f/6 rectilinear, focussing, specimens, price £5; deposit.—No. 271, office of this paper, 1, Creed Lane, E.C.

Kodak for sale. Folding Kodak, No. 5, complete, with strong folding tripod to suit, also waterproof canvas cases, with straps, for both Kodak and tripod, all new and in first-class order, cost £16. Can be seen at this office.—Address, James Keith, C.E., 57, Holborn Viaduct, London, E.C.

Lancaster's 25s. Omnigraph, new condition, specimens shown, 18s. 6d.—Phos, 21, Avenue Villas, Child's Hill, N.W. (after six).

Kodak No. 3 Junior, in perfect order and as good as new, leather case, and four-folding tripod stand, complete, film for about 12 pictures in camera and roll of 56 unexposed, cost £9 8s. 6d. less than a year ago; lowest price, a bargain, £7; deposit.—F. Curry, Lismore, Ireland.

No. 2 Diamond quarter hand-camera for 12 plates, complete, with R.R. lens, two finders, time and instantaneous shutter, good condition, 15s.—K., 9, Cornwall Terrace, Old Charlton, S.E.

The Rover Magazine hand-camera for 12 quarter-plates, quickly and easily changed by two simple movements, shutter always set, R.R. lens, iris diaphragms, leather case, equal new, price £3 10s.—J. E. Thornburn, Low Moor, Aspatia.

Lancaster's Rover hand-camera, carries 12 quarter-plates, quite new, in case, 55s. cash.—Arthur Dalton, Wantage, Berks.

Talmer, quarter-plate, R.R. lens, new August last, £3 15s., including sling case.—D., 50, Shepherd's Bush Road, W.

Swinden and Earp's latest pattern hand-camera, carries 20 quarter-plates, light, compact, and self-contained, in leather case, no dark slides or metal sheaths required, nearly new, price £4 10s.—A. Weston, 7, Angell Road, Brixton, S.W.

**Lantern.**—Hughes' Pamphengs lantern, 4-wick lamp, portrait combination, 35s. cash.—Arthur Dalton, Wantage, Berks.

**Lenses, etc.**—5 by 4 rectilinear, f/6, iris diaphragm, 31s.—Darcus, Holywell, Dundrum, Dublin.

Lancaster's whole-plate 11 in. Rectigraph, cost £4, perfect condition, £2.—E. Martin, Photographer, Melbourne, Derby.

7 by 5 wide-angle rectilinear, 36s.; 7 by 5 rapid rectilinear, 25s.; rapid cabinet portrait lens, 37s. 6d.; two 7 by 5 Hare's double slides, 30s.; all perfect condition; equal new.—59, Keppoch Street, Roath, Cardiff.

Ross No. 3 carte lens, perfect, £6 10s., cost £11 10s.—29, Oakhurst Grove, East Dulwich, S.E.

5 by 4 Optimus wide-angle euryscope lens, largest aperture, f/9.5, price 42s.—Tower House, Mawneys Road, Romford.

Darlot's No. 2 combination set, in perfect condition, consisting of a portrait combination covering half-plate, and six spare lens, forming about 30 different rectilinear lenses varying in focus from 2½ in. up to 18 in., and covering all plates from quarter up to 13 by 16, excellent variety for half-plate, whole-plate, or 10 by 8; cost £10 10s., price, in leather case, £6 6s.; approval on deposit with Editor.—Bedford, 7, Linton Crescent, Hastings.

Swift's rapid Paragon lens, 8 by 5, only used twice, and Newman's shutter for same, lowest price, £5.—Apply by letter only, T. H. Swaine, Cancer Hospital, S.W.

Excellent half-plate lens by London Stereoscopic Company, 40s.—L. R. Holmwood, Walton Park, Clevedon.

Lenses, Chambers' whole-plate R.R., 55s.; Ross' 6 in. portable, 55s.; Taylor's whole-plate single, 35s.; perfect.—137, Westgate Street, Gloucester.

Half-plate rapid rectilinear lens by Houghton, comparatively new, splendid instrument, giving excellent definition, 38s.; approval.—Siwell, 23, Spital Street, E.

Ross' extra-rapid universal symmetrical f/5.6, iris diaphragm, cost £5 10s., 6 in. focus.—No. 267, office of this paper, 1, Creed Lane, E.C.

**Sets.**—Lancaster's quarter-plate Instantograph, complete, two double slides, tripod, lens, shutter, etc., £2.—Fawcett, 12, Bridge Street, Stratford-on-Avon.

Lancaster's 3 by 3 stereoscopic Instantograph, as new, with instantaneous shutter, lenses, and stand,

complete, three double dark slides, cost 109s., will take 70s.; also syphon washing tank and two printing frames for same for 5s.—Ernest Lingford, Bishop Auckland.

Charterhouse Stores' modern whole-plate camera, every movement, three backs, tripod, and case, Optimus rapid rectilinear lens with Thornton-Pickard shutter, cost £18, price £9; also Lancaster's half-plate Instanto, three backs, and tripod, Photo. Artist's Stores' rapid rectilinear lens, cost £6 5s., price £3 10s.; approval; deposit.—Herbert Spencer, Masboro' House, Batham.

First-class Lancaster's Instantograph, quarter-plate, rectigraph lens and shutter, two double dark slides, in solid leather case, for sale, or in exchange for good cushion or solid tyred diamond frame safety; must be in good order.—G. Cooke, Roscrea, Ireland.

For sale, Perken's 12 by 10 camera, three dark slides, three lenses, shutter, cases, tripod, etc.; also Sands and Hunter's half-plate camera, six dark slides, three lenses, shutter, cases, tripod, etc.; also Watson's stereo camera, pair Wray's iris lenses, six elides, shutter, case, tripod, etc.—Captain Norwood, Snow Hill View, Wakefield.

First-class half-plate set, light Kinner camera, four backs, turntable, three-fold sliding stand, Casket, Taylor and Hobson's lenses, Sands and Hunter's shutter, working between lenses, cases, etc., complete, 11 guineas, cost double.—M. E. Mallett, 227, Finchley Road, N.W.

15 by 12 camera, London Stereoscopic make, very complete outfit, nearly new, very little used, price moderate.—Sir G. Clark, Penicuik House, Penicuik, N.B.

Quarter-plate camera, three double backs by Perken, Son, and Rayment, Optimus 5 by 4 rapid rectilinear, 3-fold tripod, socket head, velvet focussing cloth, solid leather case, new, cost £7. Offers?—Sydney Graves, Astley Bank, Lewisham Hill.

Lancaster's quarter-plate Instantograph set, as new, £1 15s.; three double backs, 10s.—211, Crystal Palace Road, East Dulwich.

Half-plate portable camera, separate extension, two best double backs, and guinea tripod, £5 5s., bargain; 7 by 5 lenses, R.R., 30s.; W.A.R., 30s.; landscape f/8, 20s.—Phos, 21, Avenue Villas, Child's Hill, N.W. (after six).

Quarter-plate camera, rising front, rack lens, two double backs, and changing bag, all in fine condition, with waterproof bag and stand, complete, price 30s.—Gibbs, 19, Grant Street, Birmingham.

Whole-plate camera, tripod, slides, excellent French lens, cost £10, will take £3 10s.; approval.—Lewis, Oakfield, Walton-on-Thames.

Whole-plate camera and case (almost new), three double backs and carriers, portrait lens, working at f/4, and stops, R.R. lens and stops, splendid definition, ash tripod and case, focussing cloth, printing frames, dishes, 2 doz. Ilford plates, cost about £34, will sell for £15. Can be seen after 5 p.m.—9, Richmond Place, Holloway.

Half-plate camera, long-extension, very light, reversing and swing-back, three double dark slides, almost new, rapid rectilinear lens, and 4-fold tripod, price £5 5s.—Good, 38, Rainbow Street, Camberwell, S.E.

Superior Spanish mahogany quarter-plate camera, London made, all movements, two double backs, Optimus R.R. lens, as new, 70s., bargain; also capital mahogany half-plate camera, leather bellows, all movements, one double back, and one joint ash tripod, sound condition, 40s. Can be seen.—W. Middleton, 2 and 3, Aldgate, E.

Lancaster's 1891 Special Instantograph, three double dark elides, rapid rectigraph lens, Sea-Saw shutter, tripod, and leather case, price £8. Can be seen by appointment.—M. T., 32, Langridge Road, S.W.

7 by 5 Meagher camera, six double slides, six fronts. Offers? 12 by 10 lenses by Grubb and Wray, dishes, frames, stands, retouching desk. Seen after 2 p.m. any day.—Doyle, Dacre House, Lee.

Lancaster's (1891 patent) quarter-plate Instantograph camera, lens, shutter, tripod, etc., complete, as good as new.—H. Brain, Gloucester Terrace, Louth.

**Shutter.**—Kershaw shutter, 2½ in. hood, perfect, cost 24s., price 15s.—J. Daniell, Dovedale House, Llanelli.

Thornton-Pickard shutter, time and instantaneous, also Sands and Hunter's, both whole-plate and good as new, price £2 10s. for both, or 20s. and 40s. separately.—Vesey, Draycott Place, Sloane Square.

**Stereoscopic Apparatus.**—Stereoscopic hand-camera by Rouch (Eureka model), iris diaphragms, special regulating shutter, new, £10, cost £14.—Cornish, 45, Brompton Square, S.W.

**Sundries.**—Lancaster's half-plate Silver Ring R.R. lens, as new, £2 2s.; 11 half-plate plush mounts in boxes, quite new, 10s.; 1 doz. 24 by 19 plates, sunk mounts, 6s.; one polished mahogany retouching desk, with pencils, complete, 25s.; other accessories; send for list.—E. Yerbury, St. Margaret's Lodge, Kilburn.

Safety, worth £16, price £8; diamond, ball head, cushion, equal new; approval; carriage paid anywhere; letters first.—Foster, care of 26, Cornation Square, King's Lynn.

Cushion tyre Safety, balls throughout, £8, worth £15, latest improvements.—Goffe, 25, Distillery Street, Norwich.

Three vols. AMATEUR PHOTOGRAPHER, splendidly bound, also good violin; exchange for microscope.—Moses, Journalist, Dartmouth.

Magazine hand-camera, also magic lantern, great bargains. What offers?—P. Barrett, 100, Lower Road, Cork.

## WANTED.

**Cameras, etc.**—Half-plate camera no lens, and three fold tripod; approval; deposit.—Chas. Cooke, Clare, Suffolk.

Wanted, Lancaster's cheap 12 by 10 Multum-in-Parvo.—P. Martin, 9, Alwali Road, Wandsworth, S.W.

**Enlarging Apparatus, etc.**—Lancaster's Multum-in-Parvo, or other style, cheap.—H. A., 139, Dashwood House, E.C.

**Hand-Cameras, etc.**—Wanted, hand camera, also Lancaster's quarter Instanto lens, with See-saw shutter preferred, good exchange, or cash if cheap.—Artist, 3, Walpole Street, Wolverhampton.

Ideal, cheap for cash.—H. A., 139, Dashwood House, E.C.

Wanted, good 5 by 4 hand-camera cheap for cash; send specimen work if possible.—Photo, 275, Mare Street, Hackney.

Wanted, Rouch's 5 by 4 modern Eureka fitted with Swift's, Wray's, or Ross' lens. Specimens and lowest price to No. 270, office of this paper, 1, Creed Lane, E.C.

Cheap hand-camera wanted.—Pellatt, The Friars, Muswell Hill.

**Lanterns.**—Magic lantern, very portable, with 4in. or larger condensers, for limelight, Pringle-Beard pattern preferred.—Crossley, Rodley, Leeds.

**Lenses, etc.**—Wanted, good half-plate Wray's lens in exchange for Lancaster's quarter-plate set, five double backs.—Sykes Crowther, Pudsey.

Wanted, half-plate wide-angle rectilinear lens, about 4½ in. or 5 in. focus; approval; deposit.—A. H. Kellett, Burnley.

Lens, portrait, quarter-plate, Lancaster's No. 376P, cash; approval.—Gilhen, Millbrook Cottages, St. Budeaux, Devonport, Devon.

Wanted, single landscape lens by Swift, Crouch, or other first-class maker, half-plate, or 7½ by 5; approval.—No. 267A, office of this paper, 1, Creed Lane, E.C.

**Shutter.**—Wanted, Thornton-Pickard shutter with speed indicator to fit Lancaster's half Instanto; approval.—Alexander, Limpley Stoke, near Bath.

**Set.**—Complete set wanted, 5 by 4 or half-plate camera, rapid rectilinear lens, and all accessories.—Particulars to H., 29, Twicken Road, N.W.

Quarter-plate camera, suitable for walking tour, front extension, Optimus R.R. lens, compact tripod, and three double backs.—W. J. Giddins, Savings Bank Department, General Post Office, E.C.

**Sundries.**—Wanted, quarter-plate camera, Dallmeyer 3D lens preferred, must be by good maker, in first-class condition, and cheap for cash; also retouching desk, lead rest, pendulum rocker, and burnisher. Write, stating particulars and price, to E.P., care of Messrs. A. and G. Taylor, 73, Queen Victoria Street, City.

Vol. xiv. of AMATEUR PHOTOGRAPHER, also Index to vol. viii.—E. H. Grayson, 21, Cannon Street, Manchester.

Wanted, case and dark slides for Lancaster's whole Instanto, also dark-room lamp; good exchange or cash.—Braithwaite, Jeweller, Carnforth.

**AMATEURS AND PROFESSIONALS** should have a Bottle of the Improved Film Expanding Fluid. Works splendidly, any developer, wonderful results. Carte negatives enlarged to cabinet without apparatus. 6 oz. bottle, post free, 2s. 9d. As a guarantee of success send cabinet vignette negative; I return next day a panel negative of same for 2s. 6d.—R. Simmons, Galway.

**APPRENTICE.**—A VACANCY occurs in a Leading Old-established Landscape, Photographic Printing and Publishing Business for an Apprentice. Moderate premium. Apprentice would have the advantage of travelling with the principal in summer. Youth with artistic taste, of course, desirable; for such it is a splendid opening.—Address, "Photo Publishers," care of Messrs. Sayle, Carter, and Co., Solicitors, 35, Queen Victoria Street, E.C.

**THE HAND-CAMERA FOR 1892.** BEYER'S Magazine Hand-Camera, rapid lens, with fixed aperture, all in focus beyond 12 ft. Carry twelve plates, changed in one second; nothing to get out of order. Price, 25s. lantern size; 30s. with R.R. lens 40s., quarter-plate. For particulars send stamped envelope to W. BEYER, 5, Kelly Street, London, N.W.



# The AMATEUR PHOTOGRAPHER

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Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

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FRIDAY, APRIL 15, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare*.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—The Birmingham Photographic Society's Exhibition—

The Maddox Fund—The "Optimus" Competition—The Optician and the Amateur—Photographing on Wood—New Photographic Society—Photographing and Cycling—Camberwell Photographic Society—Dr. Lansdell and his Camera—Taylor, Taylor, and Hobson's Competition Result.

ILLUSTRATED SUPPLEMENT.

SOCIETIES' MEETINGS.—Ashton-under-Lyne—Bath—Bristol—Brixton and Clapham—Cambridge—Cardiff—Devon and Cornwall—Eastbourne—Edinburgh—Exeter—Glasgow—Guildford—Lewes—North London—Photographic Society of Japan—Sheffield—Walton—York.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

TERMS OF SUBSCRIPTION—

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POSTAL UNION ..... " " 6s. 6d. .... " " 13s. 0d.  
OUT OF POSTAL UNION .. " " 7s. 9d. .... " " 15s. 8d.

TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZEL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE AND EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

"Amateur Photographer" Monthly Competition No. 35.—  
"INLAND SCENERY, WITH OR WITHOUT FIGURES." Latest day, April 25th.—Prizes: Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, May 13th.)

THE Birmingham Photographic Society have just held their annual show, and we have taken the trouble to analyse the catalogue, with the following results:—

|                           |     |     |     |     |     |
|---------------------------|-----|-----|-----|-----|-----|
| No. of Pictures           | ... | ... | ... | ... | 422 |
| " Exhibitors              | ... | ... | ... | ... | 45  |
| " Classes                 | ... | ... | ... | ... | 31  |
| " Medals offered          | ... | ... | ... | ... | 26  |
| " Other prizes offered... | ... | ... | ... | ... | 3   |
| " Medals given...         | ... | ... | ... | ... | 20  |
| " Hon. mentions           | ... | ... | ... | ... | 25  |

In four classes there were no entries.

The following is an analysis of the prize winners:—

|                        | EXHIBITS. | MEDALS | WON. | HON. | MENTNS. |
|------------------------|-----------|--------|------|------|---------|
| Wilkes ...             | 22        | ...    | 3    | ...  | 2       |
| W. Jerome Harrison ... | 57        | ...    | 1    | ...  | 5       |
| Longmore ...           | 7         | ...    | —    | ...  | 2       |
| Southall ...           | 7         | ...    | 1    | ...  | 1       |
| Moore ...              | 8         | ...    | 1    | ...  | 1       |
| Jarvis ...             | 7         | ...    | —    | ...  | 1       |
| Rooke ...              | 15        | ...    | 1    | ...  | 2       |
| Mason ...              | 3         | ...    | 1    | ...  | —       |
| Wallis ...             | 9         | ...    | 1    | ...  | 1       |
| Leeson ...             | 6         | ...    | 3    | ...  | —       |
| Reilly ...             | 17        | ...    | —    | ...  | 1       |
| Davies ...             | 9         | ...    | 2    | ...  | —       |
| Jaques ...             | 27        | ...    | 3    | ...  | —       |
| Horton ...             | 6         | ...    | 1    | ...  | 1       |
| Heaton ...             | 1         | ...    | 1    | ...  | —       |
| Hands ...              | 3         | ...    | —    | ...  | 1       |
| Winn ...               | 14        | ...    | 1    | ...  | —       |
| Goode ...              | 8         | ...    | —    | ...  | 1       |
| Thomason ...           | 4         | ...    | —    | ...  | 1       |
| Greening ...           | 3         | ...    | —    | ...  | 1       |
| Godfrey ...            | 4         | ...    | —    | ...  | 1       |
| Rushton ...            | 15        | ...    | —    | ...  | 1       |
| Manly ...              | 8         | ...    | —    | ...  | 1       |
| Deakin ...             | 8         | ...    | —    | ...  | 1       |

The Birmingham Photographic Society has nearly 200 members, and "has carried off the National Challenge Cup (value fifty guineas), offered by the Crystal Palace Company, on the only two occasions (1890 and 1891) when it has been offered for competition . . . and has only to be won once more to become the absolute property of the Society."

One naturally wonders where the other 155 members' work is, and from the following, clipped from the *Birmingham Daily Mail*, there is some dissatisfaction as to the way the exhibition has been held:—

"The supporters of the Birmingham Photographic Society do not seem altogether satisfied with the exhibition which was held this week at the Y.M.C.A. rooms in Needles Alley. A lot of work was admittedly inferior, and some of the more practised hands seem to have finished off some of their exhibits in rather a slovenly manner.



If they rely simply upon twenty-five of the exhibits lately on view, the society are hardly likely to retain for the third year the Crystal Palace Challenge Cup, which they have already secured on both the occasions on which it has as yet been offered for competition. But it seems from one cause or another several of the best amateur photographers did not exhibit at the show just over, but with their aid and that of the work done by members of the society in the coming summer, the Challenge Cup may be, after all, secured for Birmingham. Some little surprise has been expressed that no lady exhibitor figured in this year's catalogue, for there are plenty of ladies in Birmingham whose hobby is photography."

MR. ANDREW PRINGLE intimates that the Maddox Testimonial Fund is now closed, and we note that just over £400 has been collected, which we hope the veteran may enjoy.

MESSRS. PERKEN, SON, AND RAYMENT, of 99, Hatton Garden, E.C., have made us a very handsome offer, which we have unhesitatingly accepted on behalf of our readers. They will place at our disposal 100 guineas worth of apparatus, manufactured by them, on the following conditions:—

A. That the lenses used should be of the well-known "Optimus" brand.

B. All the prints sent in to this competition shall become the property of Messrs. Perken, Son, and Rayment. The negatives of the prize prints shall also become their property.

The following are the Classes and Rules:—

#### RULES.

1. Every prize winner shall be required to make an affidavit that his negative has been produced by the aid of an "Optimus" lens within the given period, and shall produce the lens if called upon.

2. That every print must be from a negative produced since January 1st, 1892.

3. The artistic trimming of prints shall be allowed, but in all cases the full size of the negative must be stated on the face of mount and entry form.

4. Enlargements or prints from enlarged negatives will not be admissible.

5. The whole work must be done solely by the competitor.

6. All prints shall be mounted, and bear on the face of the mount in the middle, half an inch below the base of the picture, a written or printed title, and on the back a *nom de plume*. The mount must not project more than one-third of the picture on each side; for example, the mount for a print measuring  $7\frac{1}{2}$  by 5 must not measure more than  $12\frac{1}{2}$  by  $8\frac{1}{2}$  in.

7. With each print must be enclosed an envelope bearing on the outside the *nom de plume*, and inside an entry form duly filled up, bearing competitor's name and address.

8. All prints and entry forms must be received by October 31st, and must be marked outside "'Optimus' Competition."

#### CLASSES.

1. Landscape, with and without figure. Subclass A, 7 by 5 and under; subclass B,  $8\frac{1}{2}$  by  $6\frac{1}{2}$  and over.

2. Seascape. Subclass A, 7 by 5 and under; subclass B,  $8\frac{1}{2}$  by  $6\frac{1}{2}$  and over.

3. Portraiture and figure study. Subclass A, 7 by 5 and under; subclass B,  $8\frac{1}{2}$  by  $6\frac{1}{2}$  and over.

4. Instantaneous work, including also hand-camera work, limited to 5 by 4 and under.

#### PRIZES.

Apparatus to the value of:—

Class 1.—Subclass A, prize, £15; subclass B, £15.

Class 2.—Subclass A, prize, £15; subclass B, £15.

Class 3.—Subclass A, prize, £15; subclass B, £15.

Class 4.—First prize, £15.

The competition is open to all—AMATEURS and PROFESSIONALS.

We understand that Messrs. Perken, Son, and Rayment intend to offer to purchase the negative of any print, beyond the prize ones, which shows exceptional merit, especially as regards definition, covering power, etc.

We think that this Competition should be very well supported. The prizes are certainly of handsome value, and with all the summer before us, it ought to be possible to turn out some good work, and even if all cannot gain

a prize, the striving for the highest places, both artistically and technically, is a very good education. The prints will be on exhibition in our offices, and it is quite possible that we may see our way to try and criticise the same.

The Competition, it is noted, is open to *all*—amateurs and professionals; and though some may feel a qualm on this account, we are quite confident that the amateur will show himself, in some classes at any rate, fully equal to his professional brother.

THERE is a certain paper, *The Optician*, which professes to be the organ of the optical and photographic trades, and in the issue of 31st ult. it published an article on "The Amateur Who has Made a Name," which is a little curious, and is, we think, not likely to be the general opinion of the trade, which to some extent, at least, owes the enormous strides lately made in its business to the general influx of the much despised amateur; and for this reason, the paper itself is, or ought to be, thankful to the amateur. We reprint this article in order that our readers, or some of them at least, may know how they are looked upon in the trade organ.

#### THE AMATEUR WHO HAS MADE A NAME.

Our first intention was to make the sub-heading of this article read, "The Successful Amateur." Mature reflection, however, convinced us that it might be misconstrued in the sense that the two descriptions would be taken to be synonymous, a conclusion that it is by no means warranted. The evolution of the amateur photographer is, in itself, an interesting study, and a comparison between the type of forty years ago, and that of to-day does not, in its deductions, favour the latter. Is there anything like the percentage of amateurs to-day, who take so much trouble over their work, as in the "good old wet-plate days?" Truly not! Although, of course, it goes without saying that the actual number of dabblers has largely increased. We think we may safely say that the "Camera Club," which, we believe, was founded about ten years ago, is mainly responsible for having evolved the distinct type of which this article treats. The club has done much excellent work, and fostered photographic trade considerably. It deserves recognition, also, from a social point of view, in having assisted to bring into prominence the snobbish traits of many of those who have become members. While on this subject, we would mention that it has struck us as remarkable that nothing serves better to bring out everything that is mean and contemptible in man's nature than the practice of, or association with photography. Why it is so we do not know, but the fact remains. Dealers do not, and, what is more, *will not* know, one another. Professional photographers possess no mutual affinity, and as for amateurs, especially those who "have made a name," the bitterest words that are to be found in "Webster" or "Johnson Unabridged," are insufficient—consistent with a semblance of politeness, of course—to express the contempt in which they hold the productions and the opinions of their brethren. No one knows, or can explain, the why or wherefore of the supposed popularity of the type we are describing. His growth is fungoid in the extreme. Perchance he has made a lucky fluke one day when out with his camera, and caught a particularly "fetching" picture. He sends it in to the exhibition of the "Photographic Society," is medalled, and attracts, in consequence, some attention. His name appears in print in all the photographic and in one or two of the daily papers, and then the world is hardly large enough to contain him, although his subsequent work may all be marked by the most hopeless mediocrity. He reads, perchance, an article before his local society on "Pinhole Photography, or Down with the Lens." Again his name appears in print. "Must join the Camera Club," is his next reflection. He is put up and admitted, always presuming, of course, that he has not taken money for photographing in a studio. (The powers at the "Camera Club" make a fine distinction between the man who is paid for a portrait, and the "amateur" who takes orders from H.M. the Queen downwards for photographs of animals, or landscapes, etc.) Our amateur having advanced thus far, takes part in the Thursday night discussions at the "Club," and at length he manages to read a paper himself before that august assembly. In nine cases out of ten, no other results follow, or are traceable, than that the revenue of the "Camera Club Co., Ltd.," is better by the proceeds of the sale of 100 or 200 copies of its journal, in which the paper appears, and which our amateur has purchased for the delectation of his friends. By this time our friend's ideas are inflated almost to bursting. He becomes a contributor to the photographic press, cultivates the growth of his hair,



and regards himself as a *litterateur* of the first order. Photographic manufacturers and dealers begin to pour in upon him, not only samples, but full supplies of their wares, and he lives on the fat of the photographic land. He spends nothing in the pursuit of what he is pleased to term his hobby, but on the contrary makes, as we have personally overheard more than one of the species remark, "a decent thing out of it." His influence is fairly strong, and he uses it to the utmost in puffing the goods of those firms which feed him most. He is at length believed to be so great a power in the photographic world that his name is obtained to lend lustre to the directorate of a "limited" company, owing, probably, to his knowledge of business being "limited" to the duties performed by a Government second-class clerk, by a pupil in his father's workshop, or to the exigencies of the work required in the breeding of dogs, or the rearing of pigs in a country town.

Surely, considering the very thinly-veiled innuendoes, it would have been advisable for the writer to have signed his name, but probably we shall be told it is a trade organ, and therefore should not and cannot be obtained by anyone.

—♦♦♦—

In the paper on "Photographing on Wood for Engraving Purposes," read by Mr. W. T. Rawlings at the London and Provincial Photographic Association, and reported in our issue of last week, page 291, the accompanying block should have been inserted, but was not received in



time from the block makers. It represents the brass clips as used by Mr. Rawlings to hold the negative on the wood block.

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A NEW Photographic Society is being formed for the Isle of Wight, and Mr. W. W. Smee, of 27, Union Street, Ryde, will be glad to hear of any gentlemen who will be willing to join.

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PHOTOGRAPHY and cycling go well together, and the Worcester Tricycle Club, at their annual meeting on the 7th inst., formed a camera section in connection with the same. The following are the officers for 1892:—President, A. Gygell, Esq.; Committee, Messrs. J. Cain, W. Cain, T. James, F. E. Hill, S. Hill, J. F. Santuma, and J. Thompson; Hon. Sec., T. J. Hobson, Laurel Villa, Boughton Street, St. John's, Worcester.

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We regret to note that the Cambridge Photographic Society is to be wound up, in consequence of the indifference of the members, who did not support it by their attendance.

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A VERY high compliment has been paid by Dr. Lansdell, the well-known traveller and author of "Through Siberia," to a well-known firm of camera makers. The *Graphic* of 2nd inst. has a frontispiece representing the passage of a river, and prominent on one of the horse's backs is a box, which contained a camera. The description of this taken from the *Graphic* is as follows:—

Our illustration represents an incident in Dr. Lansdell's crossing the Muzart Pass of the ice range in the Tian Shan Mountains, a passage not before accomplished throughout by a European. "After descending from the glacier," he writes, "all was going well until it became necessary to ford the Muzart-nin-su, here as wide, perhaps, as the Thames at Westminster, but divided into several streams, icy cold and running rapidly.

"I suppose our dog did not like the look of the ripples, and was hanging back, when Torjee, one of my Chinese interpreters, good-naturedly dragged him up to his pommel, and thus found occupation for one hand, whilst with the other he was leading the black horse laden with kitchen necessities and, what was far more valuable, on the top, my precious camera.

"And now commenced a scene. Yesterday's route had made the black horse foot-sore, so that, in mid-stream, he stumbled, and Torjee, unable to attend to his own horse, the dog, and his own

safety, let the sumpter go. This was exciting enough, to see the animal and his load half submerged; but, on trying to rise, he was washed into deeper water, till the baggage, camera, and all disappeared, and only the horse's head was seen above the surface.

"Of course, I shouted and bellowed directions with all my might, whereupon my groom, Amin, quickly stripped and ran off in Nature's robes to where the horse was washed ashore. Thither Torjee followed, and, with great difficulty and hands benumbed, untied the baggage, and ultimately brought up my camera with a smiling face.

"It says something for the good cabinet making of the camera that little water had got in, whilst of the negatives only two were injured—namely, the views of Mazarbash, where we clambered down an ice-cliff, and Tamghatash, where, through the baggage-horses not coming up, we were left supperless, to sleep all night in this inhospitable region in the open."

Dr. Lansdell has also sent the following letter to Messrs. Perken, Son, and Rayment, the firm in question:—

GENTLEMEN,—It will interest you perhaps to know that in the frontispiece in the *Graphic* of the 2nd inst., the drowning camera on the horse's back represents an "Optimus" made by you.

It accompanied me throughout my last journey of 50,000 miles, to heights of 18,000 feet, through temperatures sometimes many degrees below freezing and through equatorial heat. Nevertheless, I am pleased to say the apparatus suffered but little. The "Eury-scope" lens also worked quite satisfactorily, and has enabled me to secure some hundreds of excellently defined negatives for lantern slides for illustration of my lectures.—Yours very truly,

HENRY LANSDELL, D.D.,  
Author of "Through Siberia."

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MESSRS. TAYLOR, TAYLOR, AND HOBSON inform us of the result of their recent competition. The prize of twelve guineas for the best negative taken with their lenses has been awarded to Mr. Acton F. Bucknall, of Kidderminster, for a  $7\frac{1}{2}$  by 5 negative, entitled "Unloading," and from a print sent us by Messrs. Taylor, Taylor, and Hobson it is a very fine production. The second prize of six guineas was awarded to Mr. Chas. C. Coulson, of Glasgow, for a quarter-plate, entitled, "In a Crofter's Cottage Home," a very fine study of an extremely difficult subject. The first print represents the unloading of a miller's wagon with a team of four horses; and the second subject is a woman nursing her child by the fireplace, and we must confess we like this better than the first one. The interior is typical of the crofter cottage. Both, however, show first-class work, and speak well for the lenses. A special prize of one guinea was awarded to Mr. J. A. Pollock, of Belfast, for a negative entitled "In Belfast Lough."

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We regret that, in consequence of pressure on our space by the Supplement, many notes on novelties, Queries and Answers, etc., are held over. The competition this month has been exceptionally well supported, considering that it is a subject in which the amateur is notably weak. There were few bad prints, and many showed extreme care in posing; but in many cases also these were spoilt by the use of incongruous and inartistic backgrounds and accessories, by inequality of lighting and want of softness and roundness in the figures, due in many cases to the use of too small a stop.

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**South London Photographic Society.**—Fixtures for April, 1892: April 18th, excursion to Canterbury; April 20th, demonstration of the new cold bath platinum process, by Mr. F. W. Edwards; April 23rd, outing to Dulwich Village and Dulwich College.

**Photography.**—A course of twelve lectures and demonstrations by Mr. W. T. Wilkinson, to be given in the Whitworth Street, Manchester Branch, beginning Wednesday, April 20th, fee 7s. 6d. syllabus of lectures, including those of collotype and photo-mechanical methods of reproduction. Each subject will be practically demonstrated from beginning to end. Text-books: The Ilford Manual or Burton's "A. B. C. of Photography." If sufficient demand is expressed arrangements will be made for outdoor demonstrations on Saturday afternoon.



## Letters to the Editor

### HAND CAMERAS.

SIR,—In your issue for April 8th, chapter xix., "Instantaneous Photography," Mr. Jerome Harrison lucidly describes the salient points of an efficient hand-camera. I have for some years taken great interest in the development of this type of instrument, and having used them under varying conditions and in different parts of the world, with a growing conviction of their superiority over others for the traveller, perhaps you will allow me to offer a few remarks on the points referred to.

It may at once be admitted that there are two distinct classes who use the hand-camera—the casual operator who essays snap shots only, and the tourist who wishes this compact and portable form to fulfil all the requirements of an ordinary bellows camera, together with those of the always-ready unobtrusive hand-camera. For the first-named class, the so-called "fixed focus" (or one lens) magazine form may answer sufficiently well. Its use is necessarily limited to the one class of work. But for the tourist who wishes for the advantages named, this type will certainly *not* suffice. He requires to use lenses of different focal lengths, to focus and compose on the ground-glass, and, above all, he *must* have a swing back, and should have a rising front. The power of using any rapidity of plate or a roll of film should also be provided for. As Mr. Harrison says, there is no hand-camera on the market which embodies all these advantages (in the form of a box always ready without unfolding). I look upon the swing-back as a *sine qua non*; not only because it enables one to render architectural subjects without distortion, but because it is the only means by which near and distant objects can be brought into the same focal plane with a large aperture of the lens, and to do so the swing must be central with the axis of the plate.

These advantages can only be provided for in a camera of the "hand" description, when constructed to take dark slides, or a roll-holder, and it is the only type to be relied upon for all-round work. In the absence of any instrument to be obtained with these attributes, I constructed one for myself. It consists of a mahogany case, 10 in. by 5 in. by 6 in., which contains a very small quarter-plate bellows camera. This camera back is pivoted centrally by set screws to the sides of the case, thus giving a correct swing-back adjusted instantly. This back takes either dark slides or a roll-holder. A loose focussing screen is carried in a groove in the case, and the whole back of the outer case slides up for focussing. Circular holes are cut in the bottom of this case to work the roll-holder without opening the box, and by the use of a safety shutter the film is always set ready for exposure. Winding the film and setting and releasing the shutter are thus the only movements.

The camera front rises and falls in brass runners, and focussing is arranged by sliding the front backwards and forwards in grooves, clamping with an external set screw. This is more rapid, simpler, and safer than a rack and pinion.

The usual ivory scale and pointer is provided. The extension allows of the use of lenses from 3 to 7½ inch focus. I use a 3½ inch wide-angle for confined situations, a 5½ inch rapid rectilinear for ordinary work, and the single combination of the wide-angle (giving 7 inch focus) for distant landscapes. By making the front of the case to slide forward, I can use the same shutter with the two latter lenses, a great advantage for marine subjects. The weight of the camera is 3 lb. without roll-holder; 4 lb. with it, charged for forty-eight exposures.

As regards finders, the usual form with small ground-glasses is of little use, especially in sunshine. I use a biconcave lens, let into the camera, with a mirror set at an angle of 45 deg., and the brighter the sun the clearer the image. I recommend a tripod of the Alpenstock form, as made by Harger Brothers, Settle, which can be cut down to walking-stick length if necessary. For covering, the light waterproof tweed is the best material, and it should be so fitted that all the manipulations can be carried out when it is strapped on. A separate carrying case is a mistake. A spirit level should be let into the top of the box, and all the working parts should be underneath, sockets being provided for tripod work.

Every variety of work can be done with a camera of this description, while its great capacity (forty-eight exposures), with small bulk and ease of working, combine the facilities of a magazine camera with the advantages of a tripod camera. These

remarks may perhaps assist those who have failed to combine the essential points enumerated by Mr. Harrison in one instrument, and I shall be glad to give further data if required through these columns.—I am, etc., H. W. B. BRUNO (Major).

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### A NEW POINT IN DEVELOPING.

SIR,—Amateurs as a rule rush to a conclusion, and by so doing often blame the wrong cause. My experience a few days ago may perhaps be useful to others.

After exposing six plates, I proceeded to develop them with Ilford formula hydroquinone, made about three weeks before, with the result that in the first two the image came up and finally disappeared. I could not understand the reason, and developed the next two plates with pyro, Wratten and Wainwright's formula; these were all right. I then rushed to the conclusion that something was wrong with the hydroquinone developer; fancied I had bought sodium sulphate instead of sulphite; also fancied my plates had been fogged with damp, and in fact fancied all sorts of reasons. However, having two plates left, I thought I would try again with the extraordinary hydroquinone developer, and before mixing Nos. 1 and 2 together, I thoroughly shook them up; the result was two very good negatives.

In talking over the matter with a brother amateur, he confessed he had some developer which would not work, we examined it, shook it up, and found it developed all right.

To-day talking to a professional, he acknowledged he liked the hydroquinone developer being clean, but it was so uncertain, he had spoiled three interiors which he could not understand the reason of (had not shaken up developer which had been standing in a cold room), so had given up all idea of hydroquinone.—Yours truly,

ROWLAND

Moral.—Shake up your developer.

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SIR,—Kindly inform my photographic friends that from this date, for six weeks or two months, I shall be at Bognor, and any who wish to write, will please address to me there. I may mention that if we have a blow from the S.W. on the 28th, 29th, 30th of April, that there will be some fine seascapes to be got at Bognor, as it is a high tide on those dates, and Bognor is noted for its heavy seas; there are also some good subjects to be got about the neighbourhood, and as I shall be there I shall be happy to show any amateurs round about, as I know the neighbourhood for miles round.

The Pier Hotel will be found a *good hotel*. The head-quarters of Cyclist Touring Club is the Bedford. There is a good dark-room at Mr. Wood's, at the Post Office, and so, if it should blow from the S.W. on the 28th, 29th or 30th, there will be a grand chance for hand-camera men. If wind is in the N. or E. it is no good going down for seascapes.—Yours truly,

3, Albert Terrace, Bognor.

A. R. DRESSER.

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### THE ACTINOGRAPH.

SIR,—Kindly allow me to correct an error in my letter which appeared in your last issue. In the last line, for the word "subject," read the words, "standard subjects."—Yours, etc., April 9th, 1892. W. L. NOVERRE (Col.).



**Margate**—The outcome of a very interesting exhibition of photographic slides, given at the Church Institute last week, by Mr. Tweedie, F.C.S., is the formation of a society at Margate, and on Tuesday evening a meeting was held at Mr. Tweedie's house, for the purpose of making the necessary preliminary arrangements. The following gentlemen were present: Dr. Elliott, Messrs. A. King, G. R. Tweedie, A. Malden, C. Harvey, and C. W. Hester. It was proposed that the following gentlemen should form the Committee: Messrs. Tweedie, Elliott, Malden, Harvey, Hester, and King, and this was carried. Mr. Tweedie proposed that Dr. Elliott should become their President, and this was carried. It was then proposed by Dr. Elliott that Mr. Appleby King be asked to become their Hon. Secretary, and this being agreed to, Mr. A. King consented to act as Hon. Secretary for one year. He suggested that Thursday, 21st April, would be a suitable date to adjourn to, and he expressed the hope that it might be his pleasure to report to them that a large number of members had joined this new society.



# ILLUSTRATED SUPPLEMENT,

## APRIL 15, 1892.

### Monthly Competition, No. 34, "Portraiture and Figure Study."

ACTON, MISS M.—R.R.,  $f/16$ ; 1 sec., March, bright; Ilford half-plate ordinary; albumenised paper, borax and gold. "Was obliged to use the steps as a background, as a support was needed to steady the bicycle." A very good natural result has been obtained, and the artifice by which the steadiness is obtained is not apparent at first sight.

ADAMS, W. T. (South Africa).—"A Walking Party." Optimus,  $f/32$ ; 20 sec., June, sunlight, 10 a.m.; Edwards' whole; Ilford bromide paper. "This negative was developed with eikonogen and potassium

and print, but there was no question about its receiving the Silver Medal when once this was definitely decided.

ADAMS, A. J. (Ambleside).—"Group at Cottage Door." Ross' doublet,  $f/35$ ; 20 sec., May, 1 p.m., good light; Thomas' half-plate. Flat and wanting in brilliancy.

AIREY, STANLEY (Bowness).—"Innocence." Marion's single,  $f/44$ ; September, bright, 3 p.m. The child would not sit straight, the competitor says, and the result is fearful on deep pink paper.

ALLEN, T. F. G. (Sheffield).—"Sister and I." R.R.,  $f/16$ ; 2 sec.



No. 1.]

"A VILLAGE SMITHY."  
SILVER MEDAL.

F. Dundas Todd.

carbonate." An attempt has been made to cut out the inartistic brick wall by hanging up a carpet or curtain, but as this only occupies part of the background, we still have the bricks and mortar very prominent. The grouping of the figures has evidently been on the lines of pyramidal composition, but the result has been most formal.

TODD, F. D. (Edinburgh).—"A Village Smithy." Wray,  $f/16$ ; August, 6 p.m., magnesium; Thomas' whole-plate extra rapid; platinotype, acid bath at 120 deg. "General lighting was given with one lamp behind camera burning 10 sec.; the second lamp was buried on the hearth, and was discharged by man to the right. Exposure for this a puff. I spent nearly a day rubbing down the cross lights on negative with cotton wool and spirits of wine." The judges were in great doubt whether this was admissible, in consequence of the enormous amount of work evident on the negative

June, bright, 4 o'clock; Castle half-plate; silver, acetate. "This photo was taken at Conisboro." The background is natural, but not artistic, and the lad is in a very constrained attitude.

ANNESLEY, MISS E. (France).—"Carnival." R.R.,  $f/22$ ; half second, March, cloudy, 3.30 p.m.; Ilford half; bromide; iron developer. "The subject, or rather object, in this photograph were the admiration of a village I was driving through on Shrove Tuesday." Three figures stuck all of a row, and far too black and white.

APPLEBY, E. J. (Bath).—"Reading a Story." Instantograph,  $f/20$ ; 1 sec., July, sunshine, 3 p.m.; Barnet half. The seated figure is good, but the kneeling one is far too white; the print wants trimming down.

ARCHER, C. F. (London).—"My Wife."  $f/16$ ; 11 sec., March, diffused; Edwards' half; platinotype. "This portrait is a speaking likeness, and was taken in an upstairs bedroom with a home-made



camera. A circular dab just over the top of the head is all that makes this print adhere to its mount." It may be a good likeness and is a fairly successful print, but such bad mounting will disqualify any print."

ARMSTRONG, S. (Ireland).—"Ould Mick." Wray R.R., *f*/16; 4 sec., August, bright, 4 o'clock; Paget xxx.; ordinary silver; gold. "Enclosed photo is of an old man over eighty years of age, and who would hardly keep still for exposure." Decidedly good.

ASHLEY, G. R. (Bettws-y-Coed).—"On a Summer's Afternoon." Dallmeyer R.R.; 3 sec., August, good light, 2.30 p.m.; Paget whole. Three good portraits, but the camera might have been upright.

ATKINSON, MISS B. (Gateshead).—"Homewards." R.R., *f*/22; 4 sec., February, sun shining at intervals, 11.30 a.m.; Mawson's half (Castle); silver process. "Taken on a day when the sun shone at intervals, and representing a 'hewer' returning from his work and met by his little one, whom he carries home." Printed too deep, but otherwise good.

AUSTIN, G. (London).—"Loading the Net Cart." R.R., *f*/11; 1-40th sec., September, clear, 3 p.m.; Ilford printing-out paper, Lumière quarter. "A characteristic scene at Lowestoft. Some smacks having come in from the North Sea fishery, the nets are being taken away for repairs and the two men are busily engaged." Printed too deep, and gives one no idea of sunshine, as it should do.

AXTELL, C. (Newport).—"Three Old Maids." Optimus R.R., half-plate, *f*/16; 4 sec., August, dull light, 4 p.m.; Ilford. A little too hard.

BANKS, P. F. (Rose Lane).—"Off to the Fair." Stanley's R.R., *f*/8; drop shutter, August, sunshine, 2.30 p.m.; Fry's half; silver, chloride. Too flat, but good portraits.

BARKLEY, W. (Salop).—"The Station Master and his Wife." Lancaster's, *f*/30; 12 sec., March, diffused light, 5.15 p.m.; Ilford ordinary. "This is my first competition I have entered, in which I have tried my very best." Far too stiff, and both figures staring right into the lens.

BARNETT, P. D. (London).—"7/10; 6 sec., March, bright day, 2.30; Ilford ordinary; Ilford. "Sun just gone behind a small cloud. This is my first attempt for a competition, so please criticise." A vignettéd carte-de-visite, with a crumpled background much too sharp, and the high lights are too white.

BATES, A. (Walsall).—"Lancaster's, *f*/16; 3 sec., October, slight sunshine, 3.10 p.m.; Ilford ordinary, half-plate. Spoilt by vignetting, otherwise a good print.

BEARD, L. B. (Somerset).—"Chipper's R.R., *f*/11; 2 sec., dull, 11 p.m.; Ilford half ordinary; Ilford chloride silver. Entirely spoilt by the two ugly windows on each side, and printed too deep. A very good head only could be got from this.

BEATON, MISS H. (Hyères).—"The Grandmother." Darlot; 2 sec., February, 1 p.m.; Lumière quarter-plate. "This photograph was taken in the public library and the sitter was photographed the first time in her long life." This could be considerably improved by a plain background and by cutting off the hands.

BECKWITH, W. (Leeds).—"Gloria in Excelsis Deo." R.R., *f*/8; 2 sec., September, bright, 2.30 p.m.; Thomas's half-plate; Obernetter. "My second attempt indoors; one of the first two dozen plates exposed anywhere. Negative and print absolutely untouched." A very good study completely spoilt by the too prominent teeth of the left-hand character; technically, a very fine print.

BEEDIE, W. A. (Aberdeen).—"Surgeon on board the Glen." Lancaster's, full; 1 min., March, medium, 11.45 a.m.; Ilford half ordinary, printing-out paper. A slight suspicion of movement in the face spoils an otherwise good print.

BENNETT, G. E. (London).—"Men-ling the Nets." Optimus, *f*/16, Thornton-Pickard shutter; July, sunshine, 10.45 a.m.; Ilford half-rapid; Ilford printing-out paper, borax. "I have endeavoured in this study to represent the tone of the boats, etc., as I saw them, and your remarks on same will oblige." Good, but could certainly

be improved by a little less sharpness in the background and by fewer straight lines in the picture.

BIBBY, W. H. (Blackburn).—"The Last Round before Dinner." French R.R., full aperture, window shutter; July, scorching sunshine, 12.20 p.m.; Thomas's extra-rapid. "Developed (plate and enlargement) with hydroquinone, fixed with hypo only; plate, and print untouched. The enlarging apparatus I made myself at a cost (besides camera, lens, etc.) of 2s. 6d." A fearful example of the misuse of a lens. The horse's head is nearly the same size as a man. The print is fearfully black and white.

BIRCHENOUGH, W. H. (Macclesfield).—"Measuring the Milk." Lancaster's, *f*/20; 2½ sec., May, subdued light, 6 p.m.; Ilford half ord.; Aristotype. "Negative taken with Lancaster's Instantograph, after about six weeks' purchase of camera; developed with pyro and ammonia." Shows very good and careful work, and at this rate this competitor should ere long be in the front rank.

BOTTOM, W. (Leeds).—"Waiting." Optimus, *f*/16; 2½ sec., May, sunshine, 11.30 a.m.; Barnet half ordinary; borax and gold. "The picture was taken in the centre of a wood, hence the long exposure; was developed with pyro-ammonia." Very good, though the tree is a little distracting.

BRIERLEY, J. T. (Chorley).—"Bromley as a Cow Boy." Optimus, *f*/16; 10 sec., March, very dull, 3 p.m.; Ilford 10 by 8 ordinary; Ilford P.O.P. "The day very dull, with occasional showers of drizzling rain; despaired at one time of getting an exposure." A very good study and highly commended.

BOTTOMLEY, H. (Ikley).—"Dobbin and his Master." R.R. *f*/8; half sec., June, good light, 6 p.m.; Eastman's half film; Ilford new printing-out paper. "There were a few white clouds about, and the sun was shining, but 'Dobbin and his Master' were protected from the direct light by trees at the opposite side of the garden to where the photograph was taken." A very good and characteristic portrait of a child on his "dobbin."

BRADSHAW, MISS E. (Pau).—"Rita." R.R., *f*/16; 2½ sec., March, bright, 5 p.m.; Castle whole-plate. "Began photography last September; this is my first competition." Flat and overtoned, the accessories are not artistic.

BRANDRETH, B. (Cheshire).—"An Itinerant Musician." Taylor's R.R., *f*/11; 20 sec., September, clear, 5.30 p.m.; Paget xxx. whole plate; platinotype. This print might well have been cut down, and would not have lost by being thus treated.

BRIGHTMAN, C. A. (Bristol).—"7/8; 3 sec., fair, noon; Mawson's whole plate; silver. Printed too deep or else in the sun, but soft

and delicate.

BROOK, S. (York).—"We Two." Lancaster's, *f*/30; 1 sec., Saturday in September, sunlight, 12 o'clock noon; Thomas's quarter-plate extra rapid; gelatino. "Taken in garden under trees, which cut off top light; developed with Thomas' hydroquinone, soda formula, using alum bath to harden film, and fixing in 8 oz. hypo to 15 oz. water; printed in dull light in February, and toned and washed in exact accordance with Ilford instructions, special care taken to keep free from hypo stains." Bearing on the face of it the too evident hydroquinone character, soot and whitewash.

BROOKSBANK, P. (Windermere).—"A Little More than Kin, and a Little Less than Kind." Ross, *f*/16; 3 secs., April, d. l.; Ilford ordinary; Aristotype; ammonia sulpho-cyanide, and gold. "I have never sent any photographs before to any competition, as I am quite a beginner." A very poor print and badly mounted.

BROUGHTON, MISS E. (London).—"A Cool Retreat." Optimus, R.R., *f*/32; cap exposure, June, good light, 3 p.m.; Ilford half; Watson's matt-surface. A fearfully flat and uninteresting print; an inch and a half might be cut off each side without any loss.

BROWN, W. A. M. (Leeds).—"The Young Mother." Dallmeyer's, *f*/28; 3 secs., March. "Taken in sitting room," 4 o'clock. Ilford half; platinotype. A very good print, requiring a little more detail in the whites.



No. 2. "ADA AND BERTIE." [F. Harman Orr.  
BRONZE MEDAL.



BULBECK, J. (Havant).—"Gerald." Dallmeyer's,  $f/10$ ; 2 sec., October. In ordinary sitting-room, 10 a.m.; Cadett's whole-plate, carbon. Very unpleasantly patchy, the shadow side of face far too dark.

BURDWOOD, H. (London).—"Helping." Wray's R.R.,  $f/8$ ; 30 sec., March, bright, 10.30 a.m.; Ilford half Red Label; Ilford P.O.P. "This is a portrait of my seven-year-old daughter helping (as she is pleased to term it) the cook. Have been eighteen months at photography, but have done very little portraiture. There is no retouching." A very pleasing and soft little study.

BUTLER, B. D. (Leicester).—"A Young Sportsman." Optimus; 3 sec., January, bright light, noon; Ilford half ordinary; ordinary sensitised paper. A very good study of a very lazy sportsman.

CALVERT, J. (Darlington).—"A Stitch in Time Saves Nine." Lancaster's,  $f/10$ ; 1 sec., Sept., diffused light, 3 p.m.; Ilford ordinary, half; silver, borax. "Having no studio, this photograph was taken out of doors in the back yard." Would have been improved if the background had been a little more out of focus, and the sitter had been looking up.

EVANS, J. W. (Wolverhampton).—"Only a Street Arab."  $f/32$ , 6 sec., October, very bright, 12.30; matt-surface paper; the combined bath. "With the exception of slightly touching the whites of eyes and teeth, this has not been retouched."

CALVERT, G. A. C. (London).—"Old Tom." Lancaster's,  $f/30$ ; 3 sec., September, cloudy, 10 a.m.; Ilford albumenised paper, borax and gold. Taken at Weybridge when the sky was clouded after a shower; developed with hydroquinone. Flat and poor, and showing a flare.

CANDY, MISS E. L. (Hants).—"Playing Horses." Dallmeyer's; instantaneous May, very bright light, 12.30; Marion's half. "This was rather a trying photograph to take. I think I wasted two plates over it; of course, it is spoilt by the eldest child moving a bit, but I am glad to say the parents like it." All the children are far too serious, and the white dresses are without detail; as portraits they are very good.

CARRICK, T. (Birmingham).—"Memories Dear." Lancaster's Merveilleux,  $f/16$ ;  $12\frac{1}{2}$  sec., March, good diffused light; Ilford quarter. "Only four months' experience." A full front lighting, and the face in sharp profile; the result is flat, whereas with more side light and three-quarter face a better result would have been obtained.

CHAMPNESS, A. J. (London).—Dallmeyer R. R.,  $f/15$ ; 3 sec., February, not bright; Ilford half ordinary; silver, gold. A very good portrait.

CLARKE, T. (Surrey).—"My Harriett." Stanley's R.R.; 1 sec., good light, 3 o'clock; Ilford half-plate; hot-bath process. "My first attempt at this class of work." A very good portrait, which might have been improved if the vignetting had not followed the figure quite so closely.

COBB, H. H. (Wealdstone).—"Golf Players." Lancaster's single  $f/10$ ; 2 sec., March, dull sunlight, 3 p.m.; Ilford quarter-plate. A little flat, and too many straight lines.

COLBOURNE, E. D. (London).—"My Doggie and I."  $F/16$ ; 3 sec., August, fair light, 11 a.m.; Ilford ordinary quarter-plate; Alpha paper; combined toning and fixing bath. "I had only seven months' experience when I took this, which is my sixty-eighth negative. I had a great deal of trouble in posing dog; had to take two shots at him." The child looks fearfully frightened, and at the camera instead of his dog. The blue tone of the print is extremely unpleasant.

COLLIER, MISS R. (Liverpool).—"Day Dreams." Sands and Hunter's combination portrait, full aperture; 2 sec., February, bright, 11 a.m.; Ilford half-plate ordinary. A very good character study, though the attitude is a little strained.

COOPER, MISS B. (Reading).—"My Friend." Lancaster's,  $f/20$ ; 3 sec., March, bright light, 2 o'clock; Thomas' quarter-plate; silver, borax. A little under-exposed, and the subject is facing the wrong way, and the face is in too much shadow.

COOPER, W. (Bacup).—"Peace with Honour." Lancaster's,  $f/20$ ; cap off and on, June, good light, afternoon; Barnet half-plate ordinary; silver, borax. "Taken after five months' possession of a camera." For such a young worker a very good result has been obtained, but the cups and prizes might have been a little sharper with advantage.

COPEMAN, R. W. (Blandford).—"Perken's R.R.,  $f/8$ ; with Fallowfield's 4s. 6d. shutter, no band, September, sunshine, noon; Thomas' half-plate. "My youngster feeding his chickens, a piece of corn stuck on his hand, and he is in the act of picking it off." A very good study, which is printed a little too deep, and wants an inch off each side.

COULSON, G. (Sheffield).—"Portrait." Ross R.S.,  $f/32$ ; 10 sec., September, very bright light, 4 p.m.; Ilford half-plate ordinary. A good portrait spoilt by the background.

CRABTREE, J. H. (Rochdale).—"Free Educationists." Landscape,  $f/11$ ; 2 sec., February, fairly good light, 11 a.m.; Ilford ordinary

quarter-plate. Three children stuck against a wall, and too evidently so; the print considerably over-toned.

CROWDER, C. W. (Sheffield).—"Model Keeper in Room." 30 sec., October, very bright light, 2 p.m.; Ilford quarter. Far too small a stop used. Under-exposed and over-toned.

CROWLEY, H. T. (Sheffield).—"What do you Think?" Watson's R.R.,  $f/23$ ; 6 sec., August, dull light, 4 p.m.; Ilford half ordinary; silver print; chloride of gold, sodium acetate. We do not think much of this. It is too deeply printed, and far too stiff.

CULVER, E. A. (London).—"A Quartette." R.R.,  $f/32$ ; 3 sec., January, rather dull light, 1 p.m., P.O.P. "This was developed with pyro and ammonia. The light was very bright earlier in the morning, but grew darker later on." Too deeply printed, flat and poor.



No. 3.]

"ONLY A STREET ARAB."

[J. W. Evans.

CERTIFICATE.



PANI, J. (Dundee).—"A Study." R.R.,  $f/16$ ; 6 sec., October, diffused light, 4.30 p.m.; Paget half xxxxx.; Ilford printing-out paper. "Atmosphere very clear and light splendid." Far too deeply printed; the background is too sharp, and the figure is all on the skew.

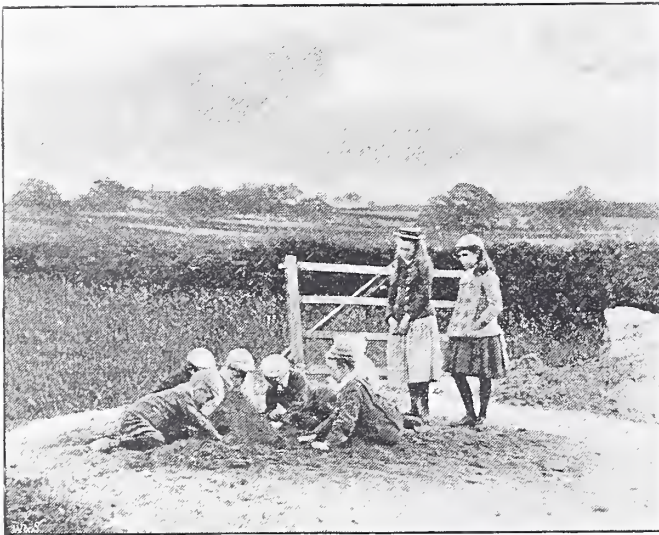
DART, W. B. (Devon).—"The Coming Grace; Play!" Optimus R.R.,  $f/11$ ; instantaneous, September, good light, 3 p.m.; Phoenix quarter; Ilford P.O.P. "Great difficulty in fixing this young gentleman, but with alternate aids of chocolate and threats, just managed to catch him, once. His great idea was to knock the wickets down, which he promptly did after being taken." A clever little study; the serious determination on the young batsman's face is very good.

DAVIS, G. T. (Great Yarmouth).—"Messrs. French and Son." French quarter-plate, full;  $1\frac{1}{2}$  sec., August, good light, 4 o'clock; Fry's quarter K.S.; albumenized paper; acetate of soda. "The child was originally to be taken alone, but being nervous and frightened of the camera (as can be seen by the expression of the face), the father sat with him. Taken in the open air." Good portraits, but for the expression on the child's face.

DEAN, A. S. (Ilkley).—"At the Grindstone." R.S.,  $f/32$ ; 3 sec., sunlight, 2 p.m.; Ilford half. Bromide paper. A very good study.

DELAMOTTE, E. D. (Surrey).—"Carver's Corner." Lancaster's; 3 sec., September, good light, 11 a.m.; Ilford whole; albumen paper. "The tower of church being built, found the carvers at work in a sunny corner a bright morning." There is too much foreground, and it was a mistake to take it in sunlight.

DILLON, MRS. E. "A Study." Dallmeyer's,  $f/20$ ; 15 sec.,



No. 4.]

"PLAY-TIME."

[John Gibson, Jun.]

January, fairly bright light, 11.30 a.m.; platinotype. Background detracts from this, and it was a mistake to cut off the right elbow.

DOUGLAS, MISS S. E. (Perth).—"Am I Taken Yet?" Lancaster's Instantograph, full aperture; 3 sec., August, bright light, forenoon; Ilford half-plate. A very flat print and over-toned.

DOWDALL, A. (Exeter).—"Playmates." R.R.,  $f/11$ , instantaneous; June, sun shining, 3 p.m.; Edwards' Iso. instant.; quarter-plate. "This was a snap shot taken on the way home after a day's outing with the Facile hand-camera." A very soft and clever little study, and highly commended.

DOWN, MISS M. M. (Ilfracombe).—"Confidences." Lancaster's R.R.,  $f/12$ ; quick, March, slight fog, noon; Edwards' whole-plate; platinotype. There is a great deal too much unnecessary matter in this print; it could well be cut down to a 5 by 4, and is a little too flat; the expression on the child's face is simply perfect.

DUFF, E. A. (London).—"The Young Photographer." R.R.,  $f/11$ ; 1 sec., July, diffused light, noon; Ilford bromide; Black Band quarter-plate. The print is a great deal too flat, and wanting in detail, but the idea is decidedly good.

ELLAM, J. E. (Yarm).—"Meditation." Wray's,  $f/11$ ;  $\frac{1}{4}$  sec., March, good light, 2.15 p.m.; Castle; Jacoby's gelatino-chloride. "Taken in a small yard open at the east end, therefore, at 12.15, against the light; a dark carriage rug was used as a background; negative untouched." The pose of the head is unnatural and strained, and it certainly does not convey the idea intended.

ELLIS, A. (London).—"White-haired Bob." Ross,  $f/32$ ; 3 sec., August, good light, noon; Ilford whole-plate, White Label; silver, acetate. "This is the chief of the gang of urchins who follow the

launches as they leave Marlow lock in the hope of a copper. He is quite an institution, and well known by the visitors to the district." A very fine print, and highly commended by the judges.

ELLSWORTH, W. S. (Liverpool).—"Social Evening,"  $f/16$ ; Ilford printing-out paper. "The negative was taken by me, and all the work done by myself." A very happy piece of grouping, but the print is sadly lacking in brilliancy.

FARTHING, W. J. (Wales).—"Dinnertime, Jim?" R.R.,  $f/11$ ; 2 sec., November, bright diffused light, noon; Ilford half; Scholzig's silver paper, acetate and bicarbonate gold. "The old fellow had sided his tools in a corner, and is putting on his jacket preparatory to dinner; hence the question." A very good print, and highly commended by the judges.

FOGWILL, A. (Portsmouth).—"Octogenarians." Instanto,  $f/10$ ; 1 sec., July, subdued light; Ilford half. A fearful example of formal composition and black over-printing.

FULLJAMES, H. J. (London).—"An Orient Musician." Ross R.R.,  $f/8$ ; 8 sec., January, moderate, 1.30 p.m.; Edwards' whole, Ilford P.O.P. "Taken in a yard, 12 ft. by 6 ft., surrounded by houses, necessitating considerable retouching to reduce shadows cast by top light." We should be much obliged if this competitor would attempt this again, and remove the hideous banjo, and throw the background out of focus; it is otherwise a magnificent study, and lost the premier position from these two faults.

GADDUM, MRS. S. E. (Cheshire).—"Baiting a Long Line on the West Coast of Scotland." Ross R.R.; half-sec., August, sunny, 11 a.m.; Ilford's ordinary, 10 by 8, silver borax. Had four inches been cut off the right side of this print, it would have been considerably improved.

GIBBONS, F. C. (Berkshire).—"Nursery Rhymia." Watson's half-plate,  $f/22$ ; 1 sec., July, sun behind cloud, 12.30; Ilford ordinary; Watson's matt-surface paper, borax and chloride of gold. A tableau group of children; the negative is a hard one, and the whites in print wanting in detail.

GIBSON, J. (Hexham).—"Playtime." Perken, Son, and Rayment,  $f/12$ ; 5 sec., June, diffused, 7.50; Ilford ordinary; Ilford P.O.P. "Taken one evening at sunset when I wanted to show a young friend how I exposed and developed a plate. As I had not time to go far, as it would have soon been dark, I took these children and composed the picture on ground which has since been used for a building site."

GILES, J. W. (Reading).—"Children." Horne and Thornthwaite; 2 sec., July, diffused, 4.30 p.m.; Ilford quarter ordinary; printing-out paper, formula. A very pleasing print, and highly commended by the judges.

GOLDING, A. J. (London).—"No Luck." Beck's R.R.,  $f/8$ ; cap off and on, July, diffused, 5 p.m.; Thomas's E.R.; half bromide. "This old fisherman had just finished winding in his line as I approached him on the quay at Gorleston, and on inquiry as to his success he replied 'No Luck!'" A good study, but not a successful print.

GOODLIFF, R. (London).—Lancaster's,  $f/10$ ; 15 sec., February, sunshine, 2.30 p.m.; Ilford half ordinary; silver print, acetate of soda. "Taken in an ordinary room." Printed a little too deep, but a very successful print.

GOWANS, W. Y. (Blackburn).—"Playmates." Optimus R.R., 7 by 5,  $f/16$ ; cap off and on, August, good light afternoon, Derwent. The negative is under-exposed, the print hard, and printed far too deeply.

GREENLEAVES, E. (Bournemouth).—"Meditation." Lancaster's,  $f/24$ ;  $2\frac{1}{2}$  sec., February, in shade, 2.15 p.m.; Paget quarter xxxxx.; combined fixing and toning. "Negative is a quick printer. This photograph was taken in the shade of some trees, as the sun was very bright." A very good expression has been caught, but the background might have been less obtrusively sharp.

GRIFFITH, K. (Ripon).—"Joseph Brantschen." Ross R.S.; Mawson half,  $f/11$ ; July. Not printed deep enough, and the vignetting does not improve it.

GRIFFITHS, E. (St. Columb).—"Yours Faithfully." French portrait, medium stop; 10 sec., January, dull light, noon; Ilford half ordinary. "Exposed by myself with Thornton-Pickard time shutter." A very good result has been obtained, though the background might have been without folds.

HALLETT, CHAS. (London).—"Babe." Perken, Son, and Rayment,  $f/8$ ;  $\frac{1}{4}$  sec., good light, afternoon; Thomas's E.R. half-plate; Ilford printing-out paper. Technically a good print, but should have been taken the other way of the plate.

HALSTEAD, R. (Rochdale).—"Portrait." Lancaster's Instanto half-plate,  $f/10$ ; 2 sec., February, moderately good light, 2 p.m.; Ilford ordinary. "Taken in a yard. Only five months since I first began photographing." The only fault with this is that the background is far too distinct, consequent on the style of lens used.

HARMAN, W. E. (London).—"Watering the Flowers." R.R.,  $f/11$ ;  $\frac{3}{4}$  sec., July, dull, 4 p.m.; Ilford quarter ordinary; silver, acetate of soda. "Some of the foliage had moved, as it was very windy; exposure was made by a Thornton-Pickard time shutter." Very fair, but not artistic.



**HANDS, MISS M. I. (Wales).**—Dallmeyer's, small; 2 sec., August, fair light, 3 p.m.; Ilford quarter ordinary; Watson's. "The mounting was done by myself, and it is the first attempt at printing on matt-surface." Pyramidal composition is said to be good, but the three figures forming a right-angled triangle are cramped. The left side of picture is too black, otherwise a good print.

**HARDMAN, MISS F. A. (Reigate).**—"A Kurdish Peasant." Optimus R.R.,  $f/8$ ; 3 sec., March, bright sunny day, 10.30 a.m.; Ilford, whole-plate; ordinary platinum. "It was taken in the east in a large court with windows about three feet from the ground and only at one end like a studio." The print is a little hard, and the peasant, we should say, was an Englishman; otherwise it is good.

**HARVEY, F. C. (Workop).**—Underwood's,  $f/16$ ; 6 sec., March, fair, 3.30 p.m.; Marion's quarter; Jacoby's. "This photograph was taken by Underwood's 'Albion' set in a shady corner of a yard. The negative is not retouched. This is my first attempt." Decidedly creditable as a first attempt, and is not unworthy of a position in a professional show case.

**HEMMINGWAY, H. C. (Rotherham).**—"Home Life." French R.R.; 32; 18 sec., May, good light, 8 p.m.; Ilford half ordinary; Ilford bromide. "Taken at Creswell, Derby, as a conclusion to an afternoon holiday." At least two inches might be taken off the top of this print, which is flat and poor.

**HENRY, J. P. (London).**—"A Simian Toper." Tylar's R.R.,  $f/16$ ; cap off and on, May, dull, 3 p.m.; Ilford quarter. This represents a gentleman teaching a small monkey to tinkle out of a bottle, and, considering the difficulties, the result is good.

**HENDERSON, Miss A. M. (France).**—"Please let me Rest." Voigtlander's R. Eurycope, 1 in.; 10 sec., June, clear evening; Britannia rapid whole-plate; Platinotype. The make up in this is a great deal too evident.

**HINSHELWOOD, N. M. (London).**—"Three Jolly Dogs are We." Wray's R.R.,  $f/16$ ; 4 sec., July, bright sunny afternoon, 4.30 p.m. Barnet half-plate. "Untouched in the slightest way." Good portraits, but not artistic.

**HIRST, WATSON (York).**—"On Scarbro' Sands." Optimus R.R. 7 by 5,  $f/22$ ; 3 sec., August, diffused light, 11 a.m.; Castle half-plate. A good family group, but both children's heads lean the same way, and this is distracting.

**HOLE, J. R. (Minehead).**—Optimus,  $f/16$ ; 2 sec., October, good light, 11.30; Castle quarter-plate. "Mounted in haste." A fearfully bad print; the outline of the face is completely lost in the white paper.

**HORN, D. (N.B.).**—"On the Look-out." Taylor's  $f/16$ ; 1 sec., July, bright, 1.30 p.m.; Ilford half-plate ordinary; Ilford P. O. P. "Taken in Lover's Loan, Lochfad, Rothesay. Gentleman wearing spectacles wished to see if I could manage without reflection." Good, but hardly carries out the title.

**HUNT, MISS C. (Reading).**—"Agnes." Lancaster's,  $f/20$ ; 3 sec., March, bright, 3 o'clock; Thomas' quarter-plate; silver, borax. A very good portrait indeed.

**HUTTON, W. K. (Kilwinning).**—"Three Scotch Lassies." Thirteen seconds, August, very good light, 6.15 p.m.; Ilford half-plate ordinary. "Taken in front of a small shrubbery in the garden." Printed too deep, and too formal in composition.

**JAMES, W. E. (Plymouth).**—"Little Lord Fauntleroy." Instantograph; 5 sec., July, bright, mid-day; Barnet quarter-plate ordinary. A dreadfully over-toned greenish-blue print, and the accessories are not in keeping with the character.

**JEFFREY, E. H. (London).**—"Sketching." Hinton's R.R.,  $f/22$ ; 1½ sec., June, sunlight, 3 p.m.; Thomas' extra rapid half; Schoelzig's matt surface, acetate. "Second attempt at figure study." Unless the artist is of the fuzzy school, we think he would like to have seen the landscape a little sharper; it is, however, a pleasing picture.

**JENKINS, G. W. (Surrey).**—"An outdoor group." Lancaster's; 1½ sec., July, bright day, but no sun, 3.30 p.m.; Thomas' half extra rapid. A very good group.

**JOWETT, R. K. (Aylesbury).**—"Carriages at 10.30." Single lens,  $f/8$ ; 10 sec., September, rather poor light, 4 p.m.; Ilford 8 by 5 ordinary; silver, acetate. "The above was taken under a skylight shaded with green blinds." A very good portrait, and which came, in the judging, in the last dozen.

**KEOGH, I. J. M. (Ireland).**—"My Cousin." Taylor's; Ilford ordinary; 2 sec., October, 2 o'clock afternoon; pyro and ammonia; platinum. "This photograph was taken in a small yard, top light, somewhat shaded; the negative is slightly retouched, enough to take

out freckles and other spots. I may add that it is considered a remarkably good likeness." A very good result has been obtained.

**KING, MISS T. (Grimsby).**—"Seventy-year-old Cyclist." Lancaster's half-plate Merveilleux; 4 sec., September, very bright light, 11 a.m.; Ilford half. "This photograph was taken five months after I had my camera." It was a mistake to cut off the lower part of the wheels, and there is a band of irregular toning all along the top of print.

**LEICESTER, K. C. H. (London).**—Lancaster's, full; 1 sec., December, bright light, 1 p.m.; Paget half; Ilford printing-out paper; ammonium sulphocyanide. "Developer was Paget's eikonogen hydroquinone, and acid fixing bath was used; print was dried on an enamelled metal plate." A little flat, and might have been improved by retouching.

**LEWIS, A. (Southsea).**—"Portraiture." Short focus,  $f/16$ ; 3 sec., September, dull, 3 p.m.; Marion's quarter; Celerotype; borax and gold. "I took the above six weeks after starting photography with a quarter-plate box-camera." A very ordinary print, but considering the short time since starting it shows careful work.

**LIVINGSTONE, J. (Scotland).**—"A Happy Couple." Lancaster's, full; 5 sec., August, bright light, 6 p.m.; Ilford ordinary quarter; Ilford P. O. P. "I started photography in July, and have done nothing since September. I have a Lancaster's quarter Instantograph." Two stiff figures, sitting side by side, are not very artistic.



No. 5.]

"I AM ÆT. 6 YRS."

[J. D. Dickson.]

**DICKSON, J. D. (Bucks).**—"I am æt. Six Years." Ross R.S.,  $f/12$ ; 17 sec., March, good light, 12.30 p.m.; Ilford ordinary; platinotype. "This paper on which the photo is printed has been in my possession for four or five months."

**LOMAS, H. M. (Minehead).**—"Portrait." Optimus quarter R.R.,  $f/12$ ; 3 sec., December, dull, out of doors, 2.30 p.m.; Castle. Would have been improved by retouching of face.

**LUCK, R. A. (Durham).**—"Two Fishermen."  $F/8$ ; half second, June, sunlight, 3.15 p.m.; Ilford half-plate; borax. "I spent a day at Staiths, and those two fishermen kindly stood a moment for me." flat, over-toned print, and far too much evidence of the subjects knowing they were going to be taken.

**LYNAM, G. (Stoke-on-Trent).**—"Thoughts." Rectigraph,  $f/20$ ; 4 sec., April, good light, 3 p.m.; Ilford half-plate. We should have preferred this if not taken in sunlight; still, the result is very good.

**MACDONNELL, H. (Stockton-on-Tees).**—"Home-lessons." R. R.,  $f/22$ ; 4 secs., February, dull light, 2 p.m.; Mawson's half-plate. "This photograph was taken in the open garden close beside a high south wall, a blanket for a background; negative developed with hydroquinone; the paper is Eastman's rapid 'B'; exposure to gas 8 sec., at 2 feet." A good print, but which certainly does not convey the idea of the title.

**MC EWAN, W. (Surrey).**—"Work and Gossip." Wray's,  $f/11.3$ ; instantaneous, July, sun shining, 4 p.m.; Britannia ordinary quarter-plate; Eastman's rapid bromide paper. "I waited for more than an



hour for this picture to compose itself, after bringing the barrel on the one side to help fill up that side of foreground; waiting for the horse to get in position with house took time." A very good result has been obtained, but the print is a little too white.

MCLEOD, R. C. (London).—"Curly Locks." Beck R. R.,  $f/8$ ; instantaneous, March, bright light, 2 p.m.; Thomas' platinotype. "This picture was taken to illustrate the lines written beneath it." The print is flat, grey, and poor, but certainly is a good illustration of the well-known nursery rhyme, except for the fact that what little can be seen of the child's hair is absolutely straight.

MACMILLAN, M. (Scotland).—"Picnic Party." Lancaster's,  $f/16$ ; 2 sec., September, sunshine, 1 p.m.; Ilford ordinary whole-plate; silver, carbonate of soda. "Photograph taken in plantation near shore, heavy foliage overhead. Effects of sun's rays, sun in background and on some of the faces." The effect of the sun's patches gives this print somewhat the appearance of a mosaic; it is extremely offensive and unrestful.

MAITLAND, VISCOUNT (Lander).—"Rark and File."  $f/22$ ;  $1\frac{1}{2}$  sec., July, sunshine, 11.30 a.m.; Carbutt's 12 by 10 film. "Took two negatives, and found that one man shook in each, and have therefore put one head in from the negative." The only fault with this is that it was taken in sunshine; it is a magnificent group of over sixty men, and we should have reproduced it but it would have been entirely spoilt in so doing.

MARTIN, J. H. (Blackheath).—"Home for the Holidays." Lancaster's,  $f/8$ ; quick hand exposure, January, light good for the time of the year, 12.30; Fry's half-plate; platinotype. "Taken out of doors." A very good portrait.

MASON, ED. (Ask-rigg).—"The Bogie Man." Lancaster's R.R.,  $5\frac{1}{2}$  in.,  $f/10$ ;  $1\frac{1}{2}$  sec., June, good light, 5 p.m.; Ilford quarter-plate, ordinary; red chalk carbon tissue. "This was taken in York, where the two figures and their hurdy-gurdy are well known." A very good print.

MASSF, H. J. L. J. (London).—"A Picnic Group." Lancaster/ $f/10$ ; 4 sec., July, good, 6.30 p.m.; Thomas' Ilford P. O. P. "The group of thirty had to be done in a great hurry, and at three minutes' notice (rain was expected). Some of the group moved after focussing, hence the mutilation of one boy." A very good group evincing careful work.

JACKSON, E. J. (N. B.).—"The Laird." Ross,  $f/16$ ; 6 sec., May sunshine, 5 p.m.; Ilford slow; platinum.

MEADWAY, F. W. (London).—"Photographers at work." R.R.,  $f/16$ ; shutter, August, sunshine, 1 p.m.; Ilford quarter-plate special rapid; bromide, borax. "Should have preferred a larger margin, but not having a larger camera than half-plate, could not take the mount to admit of same." The best part of this is undoubtedly the mount, which is a good silver print of a gold frame.

MELHUISE, T. W. W. (Vienna).—"After Ninety-two Years." Dallmeyer's,  $f/15$ ; 1 sec., August, good light, 11 a.m.; Thomas' half-plate extra rapid; Aristotype; combined toning and fixing bath. "The old man was 92 years of age, and had never previously been photographed." Very good, and highly commended.

MERCER, R. H. (Manchester).—"Man Trimming Hedges." Laverne's R.S.,  $f/22$ ; 5 sec., March, diffused light, 4 p.m.; Ilford quarter-plate rapid; bromide. "This is my first competition; not had twelve months' experience." The print is far too black and white.

MEYNELL, HUGO (Staffs).—Portrait. R.R.,  $f/11$ ; 2 sec., February, bright, 11.30 a.m.; Ilford ordinary half; Ilford P. O. P.; sulphocyanide, Ilford formula. "Taken after repeated attempts to keep boy still. After several failures took him on my knee, and talked to him while lens was uncapped for 2 sec." Such a short exposure would have been impossible in the room but for the reflection from the snow, the print is a little flat, but is otherwise a very good result.

MILBURN, T. W. (Hexham).—"Group Out-of-doors." Optimus,  $f/20$ ; 3 sec., diffused light, July; Ilford half ordinary; Ilford P.O.P. Good, but the swingback might have been used.

MORGAN, S. DE (Isle of Wight).—"Sunshine." Triplet,  $f/10$ ; drop shutter, June, bright noon; Edwards' quarter; Morgan and Kidd's. "The negative was developed with hydroquinone, and the bromide print with Rodinal; no retouching." A very pleasing little print, but we should have liked the background rather less crumpled.

MYERS, E. (Keighley).—"A Waltonian." R. R.,  $f/22$ ; 2 sec., August, good light, 4 p.m.; Ilford half; sulph. "He had a good dish of trout and grayling." Could have been improved by laying the net down on the ground.

NIBLETT, MISS J. (Ledbury).—"The Last of the Chartists." Atkinson's R. R.,  $f/22$ ; 3 sec., January, bright, 11 a.m.; Edwards' half; silver, borax. "I believe this old man to be the last one left of the original Chartists." Not sufficiently sharp in focus to be a good print.

NICHOLLS, A. C. (Cheltenham).—"Mariel." Taylor's,  $f/11$ ; 5 sec., Jan., diffused light, 12 o'clock; Edwards' half. "This was taken in an ordinary dining-room, a Japanese screen forming the background, white sheets were placed on the carpet and as reflectors at side." Notwithstanding the reflectors, the shadows are too dark, and the child should have been more central.

OLIVER, J. C. (Glasgow).—"Little Girl with Picture Book." Ross' R.S.,  $f/8$ ; half sec., October, cloudy noon; Wratten half; Aristotype. Very good indeed.

OLIVER, G. F. (London).—"Portrait of my Father." French R. R.,  $f/22$ ; June, strong diffused light, 2 p.m.; Ilford half ordinary; silver printing, bicarbonate, chloride of gold. "This was taken in a garden, with an ordinary background, with no reflectors or other accessories of any sort." A very good print, but the eyes are a little too staring.

PALMER, G. H. (Egham).—"Portrait of a Lady." Dallmeyer,  $f/5$ ; 2 sec., February, diffused light, 11 a.m.; Edwards' Ilford 7 by 5. "No head or other rest used. Plate developed with pyro and ammonia." This is an attempt at a style of portraiture which is a great favourite with the Germans, and represents a young lady leaning

against a mirror, the actual figure and the reflection being photographed. The print is very flat and wanting in brilliancy.

PARKER, J. E. D. (Liverpool).—"Three Generations." Aptus R. R.,  $f/16$ ; 10 sec., February, dull, 5 p.m.; half Ilford ordinary. "Nine months' experience; first attempt at group." A very good result, but print over-toned.

PARTINGTON, GEO. H. (Ashton).—"Friends." Single landscape,  $f/16$ ; 4 sec., January, moderate, 1 p.m.; Thomas' half, ordinary. "Had camera five months." Too black and white, and over-toned.

PASCO, G. S. (London).—"I am Waiting." R. R.,  $f/8$ ; 5 sec., August, good light, 3 p.m.; Edwards' Iso., half. A little under-printed, but good.

PATTISON, J. W. (Darlington).—"An Old Salmon Fisher." R. R.,  $f/16$ ; cap off and on, July, good light, noon; Castle half-plate; Obernetter paper; borax and gold. A very good study, and well to the front.

PEARCE, W. B. (Wednesbury).—"Pattern Making." R. R.,  $f/8$ ; 12 sec., September, diffused light, 10 o'clock; Ilford quarter-plate ordinary; silver, Burton's formula. "Taken inside pattern shop, which is fairly lighted." A very good study, and the print shows excellent technical work.

PERKINS, MRS. E. A. (Dorset).—"Grace." Dallmeyer,  $f/11$ ; 1 sec., February, good light, 12.45; Ilford quarter plate ordinary; platinotype. "This portrait of my cousin is absolutely untouched; no spotting was requisite, or any dodging in printing." Very good



No. 6.]

"THE LAIRD."

[E. J. Jackson.



indeed, though we should have liked it a little darker in tone.

PETRIE, G. (Dundee).—"Watching the Photographer." R.R., *f*/22; 3 sec., August, no sun, but very clear, 12 noon; Paget, half-plate, xxxxx; Ilford P. O. P. "Nice clear calm day." Printing too deep, otherwise careful work.

PIRIE, G. F. (Elgin).—"Portrait." Vever's half-plate R.R., *f*/16; 4 sec., August, sunshine, 5 p.m.; Ilford ordinary; silver, sodium acetate. A very flat, poor print.

PIRKETHLY, A. (Leith).—"Artist at Work." Optimus 7 by 5 R.R. *f*/16; slow shutter, September, weak sun, 3 p.m.; Thomas' half-plate E. R. The competitor states the gronping of this was quite accidental, and a very happy result has been obtained.

POPE, M. M. (Warwick).—"After the Heat and Toil of the Day." Ross, *f*/22; 3½ sec., July, bright, 5 p.m.; Thomas's quarter. "I have never before exhibited, though this is my third year in photography." Technically a very good print, but a little under-exposed in the lower portion.

POWELL, F. (Argyllshire).—"Jennie." Taylor *f*/8; 15 sec., January, dull, noon; Paget 5 by 4; Obernetter, ditto. "Portrait of my neighbour's little girl, aged eleven years. The plate was developed by eikonogen." Technically a very fine print, and, like all this competitor's work, evincing great care and command of the developer and printing process.

POWER, G. B. (Ireland).—"Ivan." R.R., *f*/24; 4 sec., August, fairly bright, midday; Ilford whole-plate rapid; Ilford P.O.P. Utterly spoilt by the vignetting and the awful flight of steps.

PRINCE, G. F. (Birkenhead).—"Dorothy." Single landscape, *f*/16; 1 sec., September, bright, 4 p.m.; Ilford ordinary; Ilford printing-out paper. "I have no studio or suitable room, so have to take my portraits in the yard, which was surrounded by high buildings. The negative and print are quite untouched." A soft and delicate carte de visite, which would be improved by a little more detail in the dress.

PRITCHARD, MRS. E. M. (Leighton Buzzard).—"Le Premier Pas." Kodak, full aperture; instantaneous, July, sunlight, 4 p.m.; Eastman film. "No. 5 Kodak used; am a beginner, and have never seen any one print, tone, or fix." The child has no profile; it is much under-printed and under-toned. We will give any help if letter is addressed to us.

PUCKLE, B. (London).—"Two Children Looking over Book." Single; 2 sec., August, light soft, after rain, 4.25; Ilford ordinary; silver. "The photograph taken with quarter-plate camera by Lancaster; children hard to pose; the sun half out; developed with pyro developer; not retouched or spotted, self mounted with starch." Too black and white.

RICARDO, Major F. C. (London).—"Little Mickie." R.R., *f*/22; 4 sec., July, bright light, 3.30 p.m.; Ilford rapid half; platinum. "Taken in my back garden in London; neither negative nor print has been retouched." The position of the pose of the figure is decidedly strained, and it would have been improved technically by a little more detail in the dress.

RICHARDSON, E. (Berks).—"A Family Gathering." R.R., *f*/11; 1½ sec., July, sun behind camera, but good light, 4.30 p.m.; Paget half ordinary, silver borax and bicarbonate soda. "This being my first attempt of exhibiting photographs, I have tried to represent a family gathering consisting of three generations. It was a trial of patience, on account of the infant child being so lively, taken while on visit." A great deal too harsh and wanting in artistic merit.

RICHARDSON, MRS. J. T. (Notts).—"Our Little Nut Gatherer." Dallmeyer, *f*/20; 3 sec., strong light, 2.30 p.m.; Ilford ordinary half; Ilford P.O.P. The pose is a little strained, but otherwise a very good print. But for this fault it would have been amongst the first six.

ROBERTS, T. R. (Monmouthshire).—"Optimus, *f*/24; March, bright light, 1 p.m.; Ilford's whole, slow; Aristotype, combined toning and fixing. This is spoilt by cutting off the bottom of the chair, and the sitters' feet and the glaze is something painful to look upon.

ROSSER, C. W. A. (Malta).—"Kathleen Davies." Lancaster's, *f*/20; 2 sec., July, fair light, 12.15 p.m.; Thomas' half ordinary; albumenised paper, gold. "This negative was taken in good light in a conservatory, it is unretouched. As a background I used a blanket, which in some results looks well, but in this is hardly seen." One of the best heads in the competition.

SALMON, P. R. (Cambridge).—"At the Well." Lancaster's, *f*/16; 2 sec., August, diffused light, 3 o'clock; Ilford ordinary; Ilford printing-out paper. Spoilt by the obtrusively clean white apron.

SCOTT, E. (Cork).—"Sweet Innocence." R.R., *f*/16; 3 sec., February, dull light, 10 a.m.; Ilford ordinary quarter-plate. Flat grey print of a stiffly posed subject.

SHARLAND, G. F. (Suffolk).—"Gipsy." *f*/11; 15 sec., September, in a room with one (not large) window, 11 a.m.; Paget xxxxx. quarter-plate. "Developed with pyro and ammonia; the background is the wall of the room, a plain distempered wall." A very flat, poor print.

SHEPHERD, W. (Rochdale).—"Ready for a Swing." Laverne, *f*/20; 5 sec., August, dull, 2 p.m.; Ilford quarter-plate ordinary. "I am

an eight months' worker, and have not touched it up." Far too small a stop has been used, the camera was not straight, and the two boys are trying their hardest not to laugh.

SHIMWELL, H. (Birmingham).—"Our Dick and his 'Wabbit'." Lancaster's, *f*/22; half second, June, sunlight; Mawson's half-plate; silver, bicarbonate soda. "Plate developed with pyro, metabisulphite, potash, bromide, and ammonia." Good; a clever little study.

SIME, J. L. (Edinburgh).—"Portrait." Wray's R.R., *f*/16; 5 sec., August, dull, 6 p.m.; Ilford half-plate. "Taken after one month's experience," and a very good result, technically without fault.

SMITH, C. E. (Tottenham).—"Five shilling achromatic view lens; 15 sec., February, dull, 3 p.m.; Ilford Red Label quarter. "Started photography the beginning of January; home-made camera." A very good portrait completely spoilt by a pink stain all over the lower part.

SMITH, J. (Liverpool).—"I am so Sorry." French R.R., *f*/8; 6 sec., June, morning (early); Ilford quarter ordinary; silver. "I had a most difficult task with the child, and made several exposures previously but failed; it was not until I spoke sharply to her that I gained the last, and then I had only just capped the lens when she burst out laughing." A good print lost in a wide expanse of mount.

SNOW, CHAS. (Chesterfield).—"The Little Joker." Optimus, *f*/7; instantaneous, January, flash light, 8 p.m.; Edwards's; Ilford P.O.P. Characteristic baby picture, and a bad example of flash-light work.

SOUTHELL, MRS. ANNIE (Cheshire).—"Grandmamma." R.R., *f*/11; 1 sec., January, very good, 11 a.m.; Thomas's quarter; Ilford. "Have only been at work eighteen months; the child, of friends of mine; she is very fond of having on my spectacles, hence the idea of calling her grandmamma; the plate has been intensified." A good print spoilt by the vignetting and over-toning.

SMITH, H. S. (Bradford).—"The Pride of the Family." Beck's R.R., *f*/16; half second, good, 12 o'clock; Ilford; Obernetter, phosphate of soda. "Taken in a back yard, out of the sunshine, and background, usual canvas painted one; faces untouched." Spoilt by cutting off the father's shoulder, and negative too hard.

SPALDING, F. W. (Norwich).—"Going for a Drive." Ross; 4 sec., August, bright, 7 p.m.; Ilford half ordinary; silver. Technically a very good print.

SPILLER, A. L. (London).—"An Old Salt." Lancaster's, *f*/20; 2 sec., September, good light, afternoon; Marion's half ordinary; Obernetter's. "This photograph was taken at Southwold, Suffolk, and I much regret that the youth in right-hand corner should have been included in the picture; he, however, had slipped in after I had focussed and put in the plate." Spoiled by the youth, but for this came out high up.

SPINK, A. (Notts).—"The Limited Mail." Ross' R.S., open aperture; instantaneous, June, subdued sunlight, 10 a.m.; Britannia ordinary plate. "The negative has not been retouched or doctored in any way." Printed too deep; doctoring would have improved this if it had softened the contrasts.

STACY, F. (Sheffield).—"Our Picnic Party." Ross' R.S., *f*/16; 4 sec., June, dull light, 6 p.m.; Marion quarter. A very successful bit of grouping, although we should have liked to have seen it a little more toned.

STEWART, R. (Bradford).—"Profile Portrait." Taken with quarter portrait; 3 sec., March, fair light, 11 a.m.; Edwards' quarter. "Taken in an ordinary room, with blanket for background, one window only." A very soft, delicate result has been obtained.

STONE, C. S. (Pinner).—"A Portrait." Underwood's, *f*/11; 2 sec., August, bright light, 3 o'clock; Fry's ordinary; albumen, borax and gold. Decidedly good.

STONE, MRS. E. M. (London).—"Mrs. and Miss." Ross, *f*/11; 4 sec., autumn; Thomas' landscape; Obernetter, ditto formula. "Taken out of doors on doorstep with glass rain shelter overhead." Good, but the lines in the background want taking out.

STRUTT, H. (Hull).—"A Snap Shop." Shew's, *f*/16; instantaneous, March, fair light, 4 p.m.; Paget xxxxx. half-plate; Ilford printing-out paper; sulph. cyan. amm. "Taken at Westellas, near Hull, with Shew's hand-camera. My first entry, only having commenced this year." Very much under-exposed, too deeply printed, requires half an inch off the foreground, and hardly comes up to the idea of a figure study.

STUHLMANN, C. (London).—"Figure Study." Stanley's R.R., *f*/16; September, sun shining, 11 a.m.; Ilford half-plate. "Have only had nine months' experience." Technically good, but certainly not artistic.

SUTHERLAND, J. W. (Newcastle).—"The Hay Gatherer." Optimus 5 by 4, *f*/11; half second, August, moderate light, 4 p.m.; Thomas'. This print should, we think, be disqualified, as the man is almost invisible, and the horses are the chief objects.

TARRAN, J. G. (London).—"A Model Blue Jacket." Quarter-plate R., *f*/8; 3 sec., November, a white light but no sun, between, 2 and 3 p.m.; Paget extra rapid quarter-plate; Ilford P. O. P., borax and gold. "This is my first attempt at competition, I am, off and on, a two-season worker; the picture I send you is the result of the fourth



negative. To get the picture I had great difficulty to keep the child still." A fearfully dirty print, and a disgrace to any operator, which should not have been sent in to our competitions.

THORN, J. H. (London).—"Age and Infancy." Lancaster's Meritot quarter-plate,  $f/10$ ; 2 sec., October, rather dull light, noon; Paget xxxx. Spoilt by the huge white, detailless patch of the baby's robe.

THORNTON, J. H. (London).—"On a Summer's Afternoon." R. R.,  $f/11$ ; 8 sec., Ilford; bromide paper. "I should be much obliged if you will let me know in the criticism if I did right in exposing the print rather much, so as to obtain a little detail in the dress of the lady standing at the bottom of the steps." The idea was quite right, but there certainly is now a want of detail in the dress.

TIMMINS, C. A.—"Walls have Ears." Rapid rectilinear,  $f/11$ ; 22 sec., March, diffused light, 3 p.m.; Ilford whole-plate; platinumotype. "Taken in studio on a wet day. The idea of this picture was from tableaux vivants, held at our schools in aid of parochial objects." The wall is too evidently a make-believe, and the figures at the back are far too prominent; only the one face should have been seen, and the other figures suggested by the owner of that face holding up her finger to enjoin silence.

TIMS, J. (Surrey).—"Haymakers." Optimus,  $f/22$ ; 1 sec., July, bright, 3.30 p.m.; Castle half; platino. Flat print, without any detail in the high lights.

TIPPING, E. P. (Surrey).—"French, 32; 2 sec., June, bright clouds, midday; Ilford half ordinary; borax and gold. "Was taken out of doors, and developed with hydroquinone." Negative wants intensifying; print weak and poor.

TUCKER, R. D. (Bristol).—"Marguerita." Rapid rectilinear,  $f/8$ ; 1 sec., January, flashlight; Verel; Eastman bromide paper. "The lamp used was a Hibbard flash lamp, and the negative was developed with plain pyro and ammonia, and the print under tissue-paper with the usual iron developer; no retouching to negative or print." Not improved by the vignetting, and the print would have stood longer exposure.

TULLY, J. (Hastings).—"A Game of Draughts." Lancaster's Instantograph,  $f/10$ ; 10 secs., Dec., 11 a.m., dull; Thomas's extra rapid quarter; Scholzig's. "This picture was taken in an ordinary room, and the sitters were about 9 feet from the window." A very hard print; a great deal too formal in composition.

TYLEE, C. (London).—"Photoa." French,  $f/8$ ; 3 sec., July, fairly good light; Ilford half; silver; borax. "The plate used I had had by me ten months; negative untouched, and mounted by myself." A good portrait.

WADE, J. W. (Manchester).—"The Fair One with the Golden Locks." Ross,  $f/8$ ; flashlight, 9.30 p.m.; Paget half xxxx.; sulphocyanide and gold. "This photo is one of a series of pantomime characters taken behind the scenes during the performance." A very clever character study.

WALL, MRS. L. M. (Ashburton).—"By your Leave." R. R.,  $f/11$ ; 2 sec., October, sunlight, afternoon; Ilford ordinary. "I fear the picture is partly spoilt by the reflection on the background of a plate-glass cabinet in the room behind, but hope it is up to competition standard." A very clever and well executed little study.

WALKER, W. (Notts).—"Now I'm a Granny." Foreign medium; 2 sec., Saturday, subdued light, 4 p.m.; Ilford half ordinary; silver, gold and carbonate soda. "This picture was taken at the yard at the rear of the house, and is the whole of my work, including mounting and burnishing." Far too hard a print, which would have been considerably improved by retouching.

WANNINGTON, W. E. W. (Malta).—"Orange Gatherers." R.R.,  $f/10$ ; February, bright light, 11 a.m.; Ilford half ordinary; Ilford printing-out paper. A little too much evidence of posing; technically a good print.

WARRACK, J. (Edinburgh).—"A Highland Grieve." Dallmeyer R.R.,  $f/16$ ; 2 sec., July, dull light, 1.30 p.m.; Ilford half ordinary; bromide. "My friend, the Grieve's, idea on becoming a sitter was to exchange his natural homeric grace for cast-iron rigidity, so much so that a slight change of the angle of the head made him creak all over. I tried to get a little luminous quality in the background by setting him in front of his open cottage door." A very fine head indeed, and well to the fore.

WATSON, MISS M. (Italy).—"At the Well." Lancaster's,  $f/30$ ; 4 sec., September, 10.30; Ilford whole ordinary; Ilford bromide. This negative wants carefully working up on the back so as to reduce the awful contrasts.

WATSON, J. (Whitby).—"A Portrait." Marlow's Instanto,  $f/16$ ; 3 sec., September, very dull light, 1 p.m.; Ilford half ordinary. Doubtless a good portrait, but not artistic.

WEBDMULLER, H. R. (London).—"Figure in Garden." Lancaster's,  $f/10$ ; 4 sec., September, fair, light 4 p.m.; Fry's quarter; Aristotype, combined toning and fixing. A good print, which has not been sufficiently toned.

WEBLING, A. H. (Brighton).—"An Interested Assemblage." Taylor's R.R.,  $f/16$ ; 1 sec., August, sunlight, 6 p.m.; Brightonian half;

mat silver; pbos., soda, and gold. "Taken on one of the outings of the Brighton Society. Some of our members were using their cameras to the right of the view, and these boys climbed the fence to see what was going on." Technically a very good print, but the straight lines of the fence are by no means artistic.

WESTLAKE, G. H. (Sheffield).—"R. R.,  $f/16$ ; cap off and on, August sunshine, 3.15 p.m.; Ilford half ordinary; Ilford P.O.P. The print is flat, and not sufficient care has been taken in focussing, or it would have possibly scored.

WHITAKER, C. E. (Thornton Heath).—"Fishermen' Optimus R. R.,  $f/16$ ;  $1\frac{1}{2}$  sec., July, good light, 2 o'clock; Ilford whole ordinary; Alpha. A good print, but the men are too intent on being taken.

WHITEHEAD, H. (Blackburn).—"Are you Going to the Ball this Evening?" R.R.,  $f/22$ ; 4 sec., September, moderate light, 3 p.m.; Barnet ordinary half-plate; silver print. "I have put as near date of exposure as I can think, as it was either 19th or 26th. First time I have entered my work for criticism, as I have only been dabbling in photography for eighteen months." A fine study, which would have been improved by a darker background.

WHITMORE, F. A. W. (Chester).—"I Go with the Year." R. S.,  $f/8$ ; 2 sec., October, fair light, 1 o'clock; Hinton's  $7\frac{1}{2}$  by  $5\frac{1}{2}$  film; platinumotype. "This negative was developed with pyro ammonia." A very fine print and highly commended by the judges.

WILLIAMS, G. S. (Kent).—"See-saw." Lancaster's,  $f/10$ ; 1 sec., Thomas's, October, diffused light. Too flat, and wanting in sharpness to be good.

WILLIAMS, R. D. (London).—"Miss Mischief." Lancaster's,  $f/21$ ; 3 sec., March, diffused light, 5.30 p.m.; Ilford ordinary half-plate; Aristotype; sulpho-cyanide, ammonia and gold. "Negative developed with Powell's developoids. Unfortunately this was taken in a bit of a hurry, and I forgot to lay down a mat, which would have hidden the bad floor, also the roller of the background." The whole composition leans to one side, and it is a little unwise to send the prints into our competitions done in a hurry, as the operator states, and the print hangs by a corner, thus showing careless work.

WILLIAMS, J. N. (Kirkby Lonsdale).—"The Scrimmage." Wray's R.R.,  $f/28$ ; 8 sec., December, rather gloomy, 3 p.m.; Ilford quarter-plate ordinary. Technically a good print, but we fancy any football player would ask some curious questions as to the number of forwards.

WILLIAMSON, J. (Brighton).—"The Bold Smuggler." Taylor's R.R.,  $f/8$ ; 10 sec., February, sunlight, 3.20; "Nip"; Ilford P.O.P., Ilford formula. "Subject was dressed for amateur theatrical's window; at the back is, of course, a stage window. The lighting window was about 6 ft. from figure." Good and quite theatrical in style.

WILSON, G. F. (Kirkby Lonsdale).—"After the Cock-fight." A badly trimmed, badly mounted quarter-plate print of an uninteresting subject. Wray's R.R., full aperture;  $f/2$  sec., December, dull light, 12 o'clock; Ilford ordinary.

WILSON, W. S. (Tunbridge Wells).—"Kate." Optimus,  $f/8$ ; 4 sec., December, good winter light, noon; Ilford half ordinary; Ilford P.O.P. "Taken at front door of my house, sitter being under porch, with one of Adams' drab backgrounds hung over door. Very retired neighbourhood. First attempt at competition or exhibition." Printed far too deep or it might be good.

WOODRUFF, E. E. (Folkestone).—"Fishermen." Lancaster's rapid; 3 sec., February, sun, 3 p.m.; Barnet half. Over-exposed, flat, and poor negative; wants intensifying.

WRATISLAW, W. F. (Rugby).—"Hide and Seek." Ross R.S.,  $f/32$ ; 6 sec., June, weak light, 6.25 p.m.; Phoenix whole; silver paper. "This is a portrait of a lady who was hiding under a rockery just there, by a gentleman friend, to see the effect in a photograph." A very fine whole-plate study of rockery, but utterly ridiculous as a figure study or portrait, as the head only measures about half an inch.

WRIGHT, S. W. (Great Marlow).—"Thinking." Single,  $f/16$  5 sec., March, diffused light, 12.30 p.m.; Ilford ordinary; bromide, 30 sec., iron developer. "I am, as you will see, a beginner, having had a camera about six months, but hope to send a better one later on age sixteen." Our young friend can beat many an older hand.

Messrs. Spiers and Pond have completed a very convenient dark-room for their customers, well fitted up, and lit by the electric light.

North Middlesex Society. —In the report of Mr. Beadle's lecture, the title should have been "Enlarging by Artificial Light without the use of a Lantern."

S. J. Levi and Co., of 71, Farringdon Road, and 16, Woodbridge Street, E.C., intimate that Mr. Alex. J. Jones, who has long been their representative, has now been admitted into partnership.

The firm of Jos. Levi and Co., of 40, Farnival Street, and 2, Dyers' Buildings, Holborn, is, in consequence of a dissolution of partnership, now carried on solely by Mr. M. L. Isaacs, who has been for sixteen years the managing partner.



## Societies' Meetings.

**Ashton-under-Lyne.**—April 7th., J. W. Kenworthy presiding. The evening was devoted to an exhibition of lantern slides, the work of members of the Society. There was a very good attendance, and upwards of 200 slides were put through the lantern. The following is a list of the exhibitors:—Miss Marsland, Messrs. Chadwick, Cheyne, Dean, Glazebrook, Hall, J. W. Kenworthy, C. Lord, Neild, Platt, Ratcliffe, Sacre, Turnbull, and Marsland. At the conclusion Dr. Hamilton showed Messrs. Martin's ice phenomenon, and Mr. R. T. Marsland worked the lantern. Members elected during the month are: Mr. Entwistle, Mr. J. R. Taylor, Mr. Ramsden, Mr. G. H. Knowlson, Mr. J. T. Hodson, Mr. E. Grierson, and Mr. Ratcliffe.

**Bath.**—An ordinary meeting was held on the 30th ult., Mr. Austin J. King, President, in the chair. The Chairman stated that the excursion session would commence shortly, and possibly Malmesbury would be the first place visited. He then introduced the lecturer of the evening, Mr. E. J. Appleby, who read an able paper on "Stereoscopic Photography," and supplemented his remarks with a demonstration of printing transparent stereographs. Mr. Appleby pointed out that many were under the impression that the stereoscope was a recent development of the art, but in the fourth and fifth decade of the present century it was practised more than any other system, but so much had the work relapsed that hardly any mention was made of it in standard works published within recent times. The lecturer then described the conditions necessary to produce a picture which should appear solid when viewed in a good instrument (not necessarily an expensive one). He also spoke of the power which can be acquired by training the eye to see pictures of solid objects solid as in nature. By means of numerous examples the lecturer illustrated the necessity of correctly estimating the parallactic angle; thus, the moon would represent many thousands of miles, near objects the contrary. Defects in manipulation were pointed out, as well as faults distinctly traceable to imperfect stereoscopes. The lecture was listened to with the deepest interest, and after a brief discussion, in which the Chairman, Mr. Dugdale, and others took part, a hearty vote of thanks was accorded to Mr. Appleby for his paper. Messrs. Ross and Co., London, sent two new hand-cameras for exhibition at the meeting. They were really double cameras, one used for securing the object on the sensitive film, the other portion intended as an exact guide to the work the instrument was performing. These were examined with great interest and led to a discussion on detective camera work generally, in which the Chairman, Canon Williams, Mr. Ernest Lambert, and the Secretary took part.

**Belfast Y.M.C.A.**—The monthly meeting was held on the 3rd inst., Mr. R. McCana presiding. Arrangements regarding the annual meeting (to be held on the 25th inst.) and other matters having been disposed of, Mr. J. Collins gave an interesting account of his tour in Southern Switzerland during last summer, and illustrated his remarks by a number of lantern slides, showing the beautiful scenery in that country. In the monthly print competition, the following were successful; J. E. Pim, 1st Prize, "Interior of Haarlem Cathedral"; J. A. Pollock, 2nd Prize, "In Glenariffe"; J. McCleery and T. B. Scott, a tie for third place, "At the Quay-side" and "On the River Lagan."

**Bristol.**—On the 1st inst. the subject of intensification of negatives drew a number of interested members, who thoroughly discussed the various methods of intensification by mercury, uranium-silver, redevelopment, etc. The discussion led to the admission that each process was the best under suitable circumstances, while for general use, when only one intensifier was desirable, mercury and ammonia are to be preferred. At the next meeting there is to be an exhibition of hand-cameras.

**Brixton and Clapham.**—On 5th inst. a capital entertainment was provided for the members and a number of friends, the items being a set of slides by Mr. B. G. Wilkinson, jun., who described them in a very humorous manner, and a set kindly lent by Mr. Chas. Whiting, West London Society. These latter consisted of a number of excellent views of Canterbury and Stratford-on-Avon, and were of a most interesting description. Mr. Wilkinson's slides were mostly landscape with figures, some of which are well known. Frequent applause testified the appreciation of those present, and both gentlemen were warmly thanked at the close of the evening. Mr. W. H. Harrison was elected Vice-President of the Club.

**Cambridge.**—A meeting was held on the 5th inst. Mr. F. Sanderson presided over a small attendance, which comprised a full Committee and a few ordinary members. In accordance with the notice, Mr. A. Hardy proposed, and Mr. Maden seconded, that all outstanding subscriptions be got in at the least possible delay, after which a long discussion took place respecting the winding up of the Club. The Secretary pointed out that the Club had money in hand, and by collecting the outstanding subscriptions it would be in a very

healthy state, but the only great drawback was in getting members to attend the meetings. A lengthy speech was then given by the Chairman, after which Mr. Hardy moved, in accordance with the notice: "That this Society, known as the Cambridge, be dissolved," such dissolution to take effect on Tuesday, 12th next, when a balance-sheet should be submitted, and the balance to be given to Addenbrooke's Hospital, which was agreed to.

**Cardiff.**—The last meeting of the winter session was held on the 1st inst., C. F. Gooch, Esq., in the chair. Mr. J. Storrie, Curator of the Cardiff Museum, gave an interesting discourse on a geological survey of the district from a photographic point of view. He suggested that the summer outings should be devoted to this subject to a certain extent, and that the work should be divided under separate heads. He also would like attention to be given to the photographing of the coast line, and to show the necessity of such records he instanced the fact that within a mile of Penarth the cliff had been carried away from twenty-five to thirty feet during the last eight or nine years.

**Devon and Cornwall.**—Met on the 4th inst., when some capital slides were shown by Mr. R. Rugg Monk, Mr. S. Weekes, and other members; and Mr. Eccles afforded the company a rare treat by the exhibition of a magnificent series, illustrative chiefly of the grand scenery through which the Canadian Pacific Railway runs among the Rocky Mountains, and of the difficulties the engineers had to overcome. The slides were reductions from large negatives taken by Mr. Notman, the well-known photographer of Montreal, who has the exclusive right of photographing along the route. Mr. W. Gage Tweedy, the President, admirably manipulated the club lantern.

**Eastbourne.**—The first ordinary meeting of the Eastbourne Photographic Society was held in the Natural History Museum, Eastbourne, on the 4th inst., between twenty and thirty members being present. The President (the Rev. W. G. Whittam) occupied the chair. The rules as approved at the last meeting were confirmed, and new members, including, among several ladies, Mrs. Whittam, Mrs. Fox-Watkins, and Mrs. Michell-Whitley, were proposed. A very excellent suggestion, which received the assent of the meeting, emanated from Mr. Michell-Whitley, namely, that the members of the Society should endeavour to obtain photographs of all the old and interesting buildings in Eastbourne and the neighbourhood, and that permanent copies should be enrolled in the Society's album, and with the records of the Sussex Archaeological Society. A lantern exhibition followed, some of the slides being sent from the AMATEUR PHOTOGRAPHER office, while others were exhibited by Dr. McQueen, Mr. Flatman, Mr. Holloway, and Mr. Fox-Watkins. Mr. Sparrow kindly supplied and worked the lantern, and before the members separated they passed a hearty vote of thanks to him and to those who had exhibited the slides.

**Edinburgh.**—The sixth ordinary meeting was held on the 6th inst. Mr. Hippolyte J. Blanc, A.R.S.A., the President, in the chair. Mr. Sydney Keith read a paper on "A Holiday in Yorkshire," which was illustrated by a number of slides. Four gentlemen were admitted to the membership of the Society. It was resolved that a lantern section be formed to take charge of the slides belonging to the Society, to arrange exhibitions from time to time, and to establish a loan and exchange collection of slides, permanent or temporary, the Council being authorised to frame a set of rules for carrying on the scheme. The President drew attention to the fact that the Photographic Convention of Great Britain would meet this year in Edinburgh, commencing on the 11th July, and said he was sure the members might depend on receiving a very hearty welcome to the city. The presentation print for the year, "Idle Moments," was distributed, Mr. Balmain's kindness in again preparing the plate for the photogravure process being duly acknowledged. In the course of the proceedings Mr. Blanc was heartily congratulated on the honour conferred on him last week by the Royal Scottish Academy.

**Exeter.**—A meeting was held on the 5th inst. Excellent and commodious rooms have been secured at the City Chambers, in which the meetings of the Society will in future take place, and demonstrations can be conveniently carried out. Dr. Cheese, the President, occupied the chair, and said their very best thanks were due to the Rev. J. Sparshatt, who had exerted himself to secure the premises, and he had been ably assisted by Mr. Berrie. The Hon. Secretary had also very kindly given furniture to fit up the rooms, as had also their Vice-President. He hoped the Society would now advance, and before long become an extremely useful institution in the city of Exeter. Mr. Wall gave an interesting and instructive lecture on "The Uses of the Camera," and several capital cameras and sets of lantern slides were exhibited.

**Glasgow.**—The fifth ordinary monthly meeting was held on 7th inst., Mr. William Lang, jun., F.C.S., President, in the chair. Two new members were elected. The discussion (which was continued from last meeting) on Mr. J. C. Annan's paper on "Stereoscopic Photography" was concluded, and afterwards a paper was read by Mr. Lang on "Robert Hunt and his Photographic Work." Prints



from negatives taken with Dallmeyer's tele-photo lens were the subject of much interest, and the prize stereoscopic slides kindly lent by the AMATEUR PHOTOGRAPHER were greatly admired.

**Guildford.**—At the usual monthly meeting, held on the 29th ult., a number of lantern slides, the work of various members, was exhibited to a good audience, including several friends. On the 31st ult. the annual general meeting took place, when the balance sheet for the year was presented and adopted, showing a balance to the good. After some discussion it was decided to change the name to the Guildford Photographic Society, and officers for the ensuing year were then elected, the President, Mr. G. J. Jacobs, F.R.A.S., and the Hon. Secs., Messrs. Bullen and Nunn, being re-elected. It was unanimously decided to affiliate to the P.S.G.B. Messrs. Shawcross, P. Lloyd, and J. Lloyd were proposed as members.

**Lewes.**—Messrs. A. H. C. Corder and A. H. Webbing on 3rd inst. gave a lantern entertainment descriptive of "A Holiday Tour in North Wales." Several ladies were also present. The slides were almost entirely the original work of these gentlemen, and were of remarkable beauty, both as regards choice of subject and excellence of work. The tour started at the fine old city of Chester, some admirable views of the ancient towers, city walls and the cathedral being shown. The trip up the River Dee was next graphically described, and a charming view of Ecclesdon Church thrown on the screen. The journey was continued through the beautiful Vale of Llangollen, of which several exquisite pictures of the canal and its numerous bridges were exhibited. Bettws-y-coed was the next centre of operations, a series of pictures from this lovely spot up the River Llugwy as far as Capel Curig and views of Snowdon being passed through the lantern. An excursion was then made in the opposite direction up the River Conway, the Fairy Glen and some of the wild and picturesque ravines on the River Lledr. The tour ceased at the historic town of Conway, its fine old castle and other interesting scenes being thrown on the screen.—A most interesting and "up to date" series of views were next given of the wreck of the "Elder," after which a set of coloured views, by Messrs G. W. Wilson and Co., of Aberdeen, illustrating the cathedrals of England and Wales, were exhibited.—The result of the Quarterly Competition was made known at this meeting. The certificate was offered for the best photograph of "Leafless tree or trees," Mr. Andrew Pringle kindly judged the work sent in, and awarded the prize to Mr. H. B. Constable, who sent in two subjects, which were placed first and second respectively. Mr. Percy Morris was third.—Mr. J. Tunks has consented to read a paper at the next meeting, and at the June meeting Mr. E. J. Bedford will speak of "Perspective as applied to Photography: The use and abuse of wide-angle lenses."

**North London.**—On April 5th, Mr. J. Douglas in the chair, Mr. A. L. Spiller was elected a member. Specimens of a new rubber cloth for focussing cloths and camera wraps, made by the London Rubber Co., of Liverpool, and of Mr. Otto Scholz's new collodion paper were passed round for examination and experiment. Dr. Jeserich's paper on "Photography, as applied to the Detection of Crime," lent by the Photographic Society of Great Britain under the new affiliation arrangements, was read by the Secretary, the lantern slide illustrations being effectively shown by Mr. B. J. Grover. The paper is now appearing in the Journal of the Photographic Society of Great Britain, and will, no doubt, be fully noticed in the ordinary way. There will be no meeting of this Society on Easter Tuesday evening, the next meeting being a special lantern evening on Tuesday, May 5th, when members will have the opportunity of introducing ladies.

**Phot. Soc. of Japan.**—A meeting was held on 29th February, Mr. Kajima Sebi in the chair. The following gentlemen were unanimously elected members of the society:—Count Toda, Viscount Sagara, Messrs. A. D. Charlton, A. Rogers, F. W. Gotch, Y. Takayasu, and I. Tanabe. A large number of slides from work done by members during the past year were shown by a limelight lantern. The slides were all good, the large collection of the chairman itself, which was of the highest quality, being enough to have made an excellent show. There was a fair attendance, and all who were present showed great appreciation of the exhibition. Indeed, it was declared the best thing of the kind that had been seen by any present in this country. Mr. Edmond R. Holmes expressed the opinion that such an exhibition would draw a large audience in Yokohama, and suggested that it be repeated there. The proposition was received with satisfaction, and the committee promised to make arrangements accordingly. By an unfortunate mistake a set of slides that it was thought would be particularly interesting—a set of Korean views by Mr. T. Hayashi, of the Japanese Legation in that country—arrived too late to be shown. These, however, and a number of other additional interesting slides will be available for the Yokohama Exhibition.

**Sheffield.**—The ordinary monthly meeting was held on 5th inst., Mr. B. J. Taylor in the chair, when, after the routine business of the meeting, the Secretary placed upon the table lists of the productions of the London Rubber Co., J. J. Griffin and Sons, and London Stereo-

scopic Co.; also Mr. T. G. Hibbert introduced G. Houghton and Son's Shuttle hand camera, for which are claimed several advantages over all existing cameras; after which Mr. G. Bromley gave his second half of his subject, "Stereoscopic Pictures," in a very lucid and interesting manner, which caused a great amount of practical discussion, and elicited a deal of useful information for the worker in stereoscopic slides. After the usual vote of thanks, the meeting terminated, having spent a very pleasant and instructive evening.

**Walton.**—The ordinary meeting held on 6th inst., Mr. J. Kennedy, President, in the chair. Circulars from the Stereoscopic Company, also "Photographic Scraps" were distributed among the members. The Secretary then read a letter from Mr. Stead in regard to the Lantern Mission, also a letter from the Liverpool Camera Club regarding the formation of a Joint Photographic Exhibition, the letters being referred to the Council. After announcing the excursions for the month, the American slides were then shown upon the screen by Mr. J. Kennedy, and were greatly admired by large number of members and friends present. After the American slides, some of the members brought slides, which were shown upon the screen. Among those who exhibited were Messrs. Sharrock, Edwards, Livesey, etc. The slides showed some very good work.

**York.**—April 5th, lantern exhibition; about 150 slides shown by Messrs. Vincent, Swailes, Dickinson, Redpath, Walker, Hill, Hick, and the Hon. Sec. Mr. Saville showed several 10 by 8 enlargements made from quarter-plate negatives with a Griffiths fixed-focus camera; and Mr. Dickinson some enlargements made by means of a Hume's Cantilever enlarging lantern. The Hon. Sec. showed prints on Ilford bromide paper and on Dr. Jacoby's collodion paper, sample pieces of the latter having been kindly sent by Mr. O. Scholz; the richness of tone in the finished prints elicited much admiration. The London Stereoscopic Company also sent some tastefully-got-up booklets, containing full particulars of their specialities in hand cameras.

#### SOCIETIES' FIXTURES.

- April 15.—RICHMOND.—"Retouching and Finishing," by E. Morgan.  
 ,, 15.—BRISTOL.  
 ,, 15.—HEXHAM.—Out-door Meeting at Bardon Mill.  
 ,, 16.—ROCHDALE AND DISTRICT.—Excursion.  
 ,, 18.—BELFAST.—Excursion to Glenariffe, co. Antrim.  
 ,, 20.—LEYTONSTONE.—"Photography and Book Illustration," by T. Symmons.  
 ,, 20.—BURY.—Monthly meeting.  
 ,, 20.—PHOTOGRAPHIC CLUB.—"Masking, Vignetting, and Printing in Clouds."  
 ,, 21.—LEIGH.—Arrangements.  
 ,, 21.—HUDDERSFIELD.—Lantern exhibition.  
 ,, 21.—LONDON AND PROVINCIAL.—"Photography and Crime."  
 ,, 22.—CROYDON.  
 ,, 22.—HOLBORN.—Lantern night.  
 ,, 22.—RICHMOND.—"Platinotype Printing."  
 ,, 22.—WEST LONDON.—"The Artistic Improvement of Negatives."  
 ,, 25.—BELFAST.—Annual meeting.

**Jonathan Fallowfield** requests us to notify that his premises will be closed from Thursday to Tuesday. All his April "Travellers" are issued.

**Wolverhampton.**—The monthly meeting was held on the 5th inst., the President (Mr. Holcroft) in the chair. Letters were read from the Vice-President (Mr. Lyons Wright), the Secretary of the Wolverhampton Orphanage, and Mr. F. P. Cembrano (Hon. Secretary of the Photographic Convention of the United Kingdom). Messrs. Silvers and Greenway were elected members, and Mr. J. Edwards was proposed as a member. Two letters were read from Mr. J. Elliot, Free Library, Wolverhampton, respecting a proposed photographic survey of Wolverhampton and district.—Mr. T. Ironmonger who was present, placed the matter before the Society in a definite shape, as suggested by the Free Library Committee. After some discussion as to whether the Society should undertake the work, the following resolution was proposed, seconded, and carried, "That this Society receives with favour the proposition of the Free Library Committee that the Society should co-operate with the Committee to effect a photographic survey of the neighbourhood of Wolverhampton."—Mr. J. Gale (Hon. Sec.) then gave a short demonstration on "Bromide Printing by Contact." He exposed and developed before the members two pieces of Eastman's bromide paper, and then handed them round for inspection. Several questions having been put to the operator and answered, Mr. F. J. Gibson exhibited a "Kodak hand camera" and a "Shew hand camera." Mr. W. Ratcliffe handed round some two dozen prints. Messrs. W. Oakley, T. W. Derrington, and J. Gale exhibited prints, results from sample packets of Eastman's bromide paper. Mr. J. W. Evans (Hon. Sec.) also showed prints on Dr. Jacoby's paper.



## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance, the number and full title of the query referred to.

## QUERIES.

**5624. Griffiths' Hand Camera.**—Will any reader who has tried Griffiths' Guinea hand-camera tell me if they are suitable for instantaneous work, or if Lancaster's Omnigraph is the better for quick work?—**HAND CAMERA.**

**5625. Bromide Paper.**—Enlarging on Ilford rapid paper requires five minutes. What exposure should I give for Eastman's A, B, and C papers respectively? Same negative, light, and size of picture.—**KROC.**

**5626. Density.**—Should Ilford ordinary plates be developed until high lights just show on back of film? Wall's "Dictionary" says that some plates should not be developed so far.—**KROC.**

**5627. Day Light Enlarging.**—I have not a window facing north; which is next best point?—**KROC.**

**5628. White Faces.**—Will any reader tell me the reason why the hands and face are white on my negatives instead of black?—**J. K. W.**

**5629. View Finder.**—Could any reader from experience recommend the view finders advertised by C. C. Ververs, of Leeds, in his catalogue, No. 1 at 2s. 6d., No. 1 at 9d., and if suitable for vertical or horizontal photographs; or any cheap make (portable preferred), suitable for Lancaster's quarter-plate Instantograph.—**F. W. G.**

**5630. Print Washer.**—I have great difficulty in properly washing my prints, not having a water tap or pump. I have to trust to a small running stream (at the bottom of my garden) which falls over a ledge about one foot high. The stream is the waste which runs from a 3 in. pipe on another person's ground, leading to a spring. At present I use an ordinary colander stood in a large bowl slightly tipped on one side, but the prints move about for a short time, and then settle at the bottom. At other times if left for any length of time (which I am obliged to at night), the water will perhaps gain in force and break them in pieces. Can any kind reader suggest some simple contrivance to get over this difficulty, or recommend a suitable washer in the market? If so, I should feel obliged?—**F. W. G.**

**5631. Clouds and Skies.**—Information wanted as to exposure in landscape work, using Ross's rapid symmetrical lens, with flap shutter. Also development with sulpho-pyrox, Berkeley's formula, or reference to best work on subject.—**ROCKS.**

## QUERIES UNANSWERED.

April 1.—Nos. 5555, 5568, 5570, 5574, 5577, 5578.  
 „ 8.—Nos. 5580, 5581, 5584, 5585, 5586, 5587, 5588, 5590, 5591, 5598, 5596, 5597, 5603, 5605, 5607, 5609, 5610, 5612, 5618, 5621, 5623.

## ANSWERS.

**5565. Lens.**—5½ in. is about the best focus, and the lens must be the exact distance, 5½ in., from the lens—the best plan being to focus on ground glass in the plane of the sensitive plate, and then fix the lens.—**O. L. M.**

**5575. Lens.**—(1) The single lens is preferable to R.R. when etched down. (2) Yes, it is a suitable lens.—**O. L. M.**

**5576. Photo. Soc.**—There is no society in the near vicinity of Earl's Court.—**O. L. M.**

**5582. Film Negatives.**—If the negatives are kept dry they do not take any harm and print well.—**P. J.**

**5583. Toning.**—Probably the character of the negatives has something to do with it. Try deeper printing, and use the acetate bath. Dull slaty tones are obtained by overtoning.—**P. J.**

**5589. Printing.**—It is impossible to say without seeing the negatives. Why not send some prints to the Editor, and ask his advice?—**P. J.**

**5592. Focuser.**—In reply to "Focuser," any of the focussing eyepieces could be used without a cloth; but, of course, the achromatic ones are the best. A cloth is, however, generally required for the arrangement of the picture. The methods hitherto proposed for doing away with this are too lengthy to put into an "answer."—**J. G. P. VEREKER.**

**5592. Focuser.**—Write to J. Lancaster and Son, Birmingham, for their compound focuser, to be used without a cloth. The price is only 2s. 6d.—**PERIODIC.**

**5594. Collodio-Bromide Emulsion.**

| No. 1.                     |     |         |
|----------------------------|-----|---------|
| Methylated spirit (820) .. | 24  | drms.   |
| Methylated ether ..        | 20  | "       |
| Pyroxyline or celloidin .. | 60  | gr.     |
| No. 2.                     |     |         |
| Ammonium bromide ..        | 65  | gr.     |
| Citric acid ..             | 5   | "       |
| Distilled water ..         | 90  | minims. |
| Dissolve and add—          |     |         |
| Methylated spirit ..       | 8   | drms.   |
| No. 3.                     |     |         |
| Silver nitrate ..          | 100 | gr.     |
| Citric acid ..             | 5   | "       |
| Distilled water ..         | 2   | drms.   |

Mix in dark room Nos. 1 and 2, and add No. 3 with constant agitation; keep for twenty-four hours, pour out in a flat dish to allow the solvents to evaporate, break up when set with a silver spoon, wash by stirring in 3 or 4 different lots of distilled water, collect and drain, and stir in about 8 oz. of methylated spirit; drain, and repeat this operation twice; to remove all the water, drain thoroughly, and dissolve the emulsion in

Methylated spirit .. 4 fluid oz.  
 Methylated ether ..  
 Shake thoroughly till dissolved, and filter. The above is a very good emulsion for transparencies and lantern slides. From "Wall's Dictionary."—**U. B. SMART.**

**5595. Photographing at the Zoo.**—The best portraits of animals I have seen were taken with one of the London Stereoscopic Co.'s hand-camera with twin lenses. It is obvious that the exposure must be very short, as few animals remain quiet. A short focus lens must be used, because the camera cannot be placed at a great distance from the subject, except for two or three of the animals, such as the hippopotamus, which has a large enclosure to himself. To take a lion or tiger without the bars appearing in the picture, a hand-camera that has an arrangement for focussing would be decidedly the best, as it might be risky to stand for a minute or two with your head under a cloth within reach of an animal that can jump twenty feet at a bound. Leo should provide himself with, the most rapid plates procurable, the light being bad in many of the houses, and it is doubtful whether the use of a flash lamp would be permitted.—**EXPERT.**

**5598. Tags.**—Send the slide to Platt and Witte, Birkbeck Road; they did mine for me.—**P. J.**

**5599. Pinholes.**—See that the inside of your camera and dark slides are thoroughly dusted out before exposing the plate.—**P. HARRISON.**

**5599. Pinholes.**—Dusting the plates before placing them in the dark slides is only one way of minimising the appearance of pinholes on them when finished. After the developer has been flowed on, brush the plates over with a soft camel-hair brush, so as to remove any air-bells and dust in the developer, from the film. Sometimes pinholes appear in great numbers on every plate of a batch. This is often due to particles of dust or glass getting on to the film before the emulsion has properly set.—**U. B. SMART.**

**5600. Printing.**—There is no means of getting this off without damaging the print.—**P. J.**

**5601. Tubing.**—Provided a lot of water was run through first, the tubing would have no effect on the water.—**P. J.**

**5602. Burnishing.**—Dry, and when mounted.—**U. B. SMART.**

**5604. Opalines.**—Yes. Coat both the print and the glass freely with a weak solution of gelatine and place them together and squeeze them thoroughly into contact, seeing that all air bubbles are removed. It can then be backed with cardboard or thick paper from which another small piece of cardboard can be hinged so as to make it stand upright.—**U. B. SMART.**

**5606. Lamp.**—Use the lamp you have, with good oil and good Wick. Make the holes in the bottom larger, so as to allow a good draught of air to pass up through the flame.—**U. B. SMART.**

**5606. Lamp.**—"Trix" will find the cheap candle-lamp, costing about 2s., handy and good, but perhaps the best plan is to make one's own lamp. The principle of this is to take a decent size box and cut some windows in, say, two of the sides, and glaze them with either two thicknesses of canary medium or one of canary and one of ruby cloth, or any other modifications that are required, see that there is good ventilation, and place a gas jet, if available, or if not, a paraffin lamp, inside. I find that a triangular folding screen with two windows about 6 by 4, glazed with one thickness of canary cloth and one of ruby, and a piece of zinc with a V-shaped piece cut through it so as to bend the piece downward placed on the top, and a small paraffin lamp inside, very convenient. These screens are easily made and glazed according to requirements.—**J. G. P. VEREKER.**

**5606. Lamp.**—Get one of those very small tin wall lamps, obtainable at any oil-shop, price 6d. Then take a large cigar box, cut a large opening in lid, and let in a piece of orange glass, or merely cover with two thicknesses of ruby cloth or orange paper, glue on a strip of ruby or black cloth to form a baffle, cut a good sized hole in one end, which will be the top, and make a light trap over the hole, out of the bottom half of a large size cocoa tin, inverted, with a piece, an inch and a half wide and long, cut out of the side; turn this opening towards the back of box, make a few holes in the lower part of back to let in air; if made to hang up against the wall, fix four small blocks of wood on the back so as to keep ventilation clear. Place lamp inside, with the chimney directly under the hole in top of box, and fasten the door with a brass hook and eye. The top of box should be lined with tin, and the inside of light trap blacked. This lamp gives a good safe light and costs about 9d.—**YH. SENJO.**

**5608. Substitute for Ammonia.**—"Photo" might try the soda developer, using 12 to 16 gr. of washing soda to the oz. of developer, or increase the soda and use a little bromide, about ½ gr., with it; but he must experiment, as so much depends on the plate. He will find easily many formulae for this developer, as it is much liked. If he is not entirely wedded to his 10 cent. solutions it would be worth his while to try the old-fashioned ferrous oxalate. Hydroquinone and eikonogen developers might also suit him. A large number of formulae are at the end of the almanacs for any year.—**J. G. P. VEREKER.**

**5608. Substitute for Ammonia.**—Use either of the other two alkalies, viz., sodium hydrate or potassium hydrate. Beach's pyro potash has given me every satisfaction for some time now.—**U. B. SMART.**

**5611. Distant Views.**—The most suitable lens for I. C. R. would probably be Dallmeyer's new one, specially made for this work, but I have never seen the lens, so am unable to say more about it. If he bought another, the longest focus lens which would work on his camera would be the best, and as I presume he only requires a narrow angle, a single lens would answer his requirements. I am afraid, however, that I. C. R. would be disappointed in the size of the image, so he ought to try an experiment first. An ordinary uncorrected single lens would solve this for him.—**J. G. P. VEREKER.**

**5611. Distant Views.**—For taking views from a distance a lens of long focal length would be required. If you use a R.R., say of 7 or 8 in. focus, by removing the back combination you would have a single lens of about 14 or 16 in. focus respectively, which would suit your purpose most likely. If a single lens is used, it would need to be of 15 in. focus or so.—**U. B. SMART.**

**5614. Methylated Spirits.**—The spirit now sold is utterly unfit for any photographic use.—**P. J.**

**5615. Toning Bath.**—Try soaking your prints for a few minutes before toning in a solution of common salt.—**N. B.** This will give a brown tone.—**P. HARRISON.**

**5616. Books.**—Recommend "Photographic Chemistry" (J. T. Taylor, 3s. 6d.), and "The Optics of Photography" (J. T. Taylor)—**PERIODIC.**

**5617. Blisters.**—Plunge prints directly after fixing into a saturated solution of chloride of sodium (salt).—**PERIODIC.**

**5618. Lenses.**—As R. A. W. does not give his requirements it is almost impossible to give him a complete answer. However, he ought to have a rapid rectilinear and a wide angle rectilinear; these might be of 3 in. and 5½ in. focus, giving angles of about 69 deg. and 40 degs. on the long side of the plate, or the R.R. might be replaced by a Burscope of about 5 to 6 in. focus; the single combinations of the above would be 6 in. and 11 in. focus. He might add to these a mid angle lens of say 4 in. focus, giving an angle of about 53°; and 1 ave. the fourth lens alone for some time. All these lenses would give larger angles if counted on the diagonal, which is the more correct method; for instance, the mid-angle would be about 64 deg., etc. Several makers make up lenses in sets fitting the same mount, and perhaps one of these would suit him best.—**J. G. P. VEREKER.**

**5618. Lenses.**—R. A. W. evidently intends to do good work in photography by using four different lenses. I think the following would suit him:—Single landscape lens of 7 in. focus, rapid rectilinear of 5½ in. focus, wide angle lens, and portrait lens.—**U. B. SMART.**

**5619. Hand Camera.**—Lancaster's "Rover" hand-camera is capable of turning out work of the highest quality, and I can recommend it for extreme simplicity of action, neatness of construction, and general compactness.—**PERIODIC.**

**5620. Lenses.**—The combination rectigraph lens by Lancaster is more useful for general work than the wide angle rectigraph. The former can be used as a wide, ordinary, or narrow angle lens. It is fitted with iris diaphragm, and is altogether an excellent lens.—**PERIODIC.**

**5620. Lenses.**—Most decidedly; the combination rectigraph would be the best lens for all-round work.—**U. B. SMART.**

**5622. Cresco Fyima.**—Negatives enlarged by Cresco-Fyima should be intensified after the treatment, in which case the result is frequently superior to the original state.—**SKETCHER.**



## EDITORIAL.

J. T. FILMAN.—(1) Too much foreground and without interest. (2) As a general view good, but not good artistically. Both very good technically.

G. W. S.—If you back your quarter-plates with anti-halation paper, to be had from Geo. Wheeler and Co., 46, King Street, Manchester, and after exposure place them back in the boxes with one of the same firm's cardboard protecting masks between each plate, there will not be the slightest chance of the films rubbing.

J. A. MACADAM.—The rule means that prints must not have been sent in to our competition, and must not have been medalled. Your print would be eligible, but it would not be fair for you to send us work medalled elsewhere.

JOHN ASTON.—Probably Lancaster, or Perken, Son, and Rayment could supply you with lens.

J. H.—Soak the negative in salt and water, then rub the paper off gently. The negative will be stained, but treat it with ferricyanide of potash 10 gr., sulphocyanide of ammonia 60 gr., water  $\frac{1}{2}$  oz., and wash and dry.

J. T. F.—Dissolve 100 gr. of platinum in  $2\frac{1}{2}$  oz. of nitro-hydrochloric acid; when dissolved, evaporate to a small bulk, add some hydrochloric acid, and again evaporate to expel all free chlorine; then evaporate to a thick syrup, and the acid will crystallize out.

G. E. T.—Supposing that your print focussed on is distant 220 ft., the difference of focus with an 11 in. lens would be only 1-16th in. for 165 ft., another 1-16th for 138 ft., another 1-16th for 92 ft., another 1-16th for 56 ft. Therefore you may safely say that for ordinary purposes (in out of register, which is extremely unlikely, would have no effect on the definition. This refers to  $f/8$ , and with  $f/32$  the range of focus would be sufficiently long to enable you to disregard any slight concavity of film.

MAZA.—Did you use bichloride of platinum or chloroplatinate of potash? From the look of your prints, we fancy the former. Write and let us know.

H. HOLT.—We should prefer No. 7 Certificate on the oad.

P. O. G.—Ilford plates cannot be obtained at either place.

MISS R. COLLIER.—Print duly received.

J. N. K.—Eikonogen would probably give you the best results, that is, softer and more delicate.

WM. BEATTIE.—Negatives over-exposed, under-developed, and over-printed. Entry forms sent on, but we want better work than yours for our competitions.

J. C. H., LEICESTER.—(1) The only work treating of the subject at all is H. P. Robinson's "The Studio, and What to Do in it," price 3s. 6d. (2) There is not much to choose between the two shutters; we possibly might choose B.

W. B. SMART.—Many thanks for answers and for order, which has been noted.

H. F. LINGING.—(1) Object moves 144 in. per sec.:  

$$1005 \text{ in. distance} \div (8 \times 100) = 1008 \div 800$$

$$= 63 \frac{144}{50} \div 63 = \frac{144 \times 50}{63} = 1 \text{ sec. approx.}$$

(2) You will not be able to get a greater speed than 1-40th sec. with powerful india rubber bands. (3) The only shutter to use is the roller-blind on front of lens. Always glad to help you.

S. G. S. DICKER.—Many thanks, but not sharp enough.

## Sale and Exchange.

## RULES.

**CHARGE.**—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for.

(A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m. and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C.")

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London,

E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Burnisher.**—Half-plate burnisher, very little used, excellent condition, price 8s. 6d.—L. Bagsbaw, Union Street, Doncaster.

Optimus half-plate burnisher, 20s., good as new—Lee, Netherfield, Shortlands, Kent.

Adams's half-plate burnisher, complete, with lamp, cost 8s., sell 4s.—E. J. Tapson, 94, Howson Road, Brockley.

**Cameras, etc.**—Superior half-plate Optimus W.A. camera, turntable, three double backs, leather case, tripod, perfect condition, £6.—Dudin, 4, Feuchburgh Street, London.

For sale, Lancaster's Omnigraph, lined with best leather, with extra back, cost 32s 6d., will sell for 21s. 6d., as new.—Joseph Berry, 20, Ash Street, Great Lever.

**Cameras, Lenses, etc.**—Marion's miniature landscape camera, size 2½ by 3½, long-extension leather bellows, brass fitted, folds small for pocket, with R.R. powerful lenses, new last December, good condition, one dark slide, 21s., cost 45s.; also Demon detective, 2s 6d., with light-tight bag, nearly new, cost 5s. 6d.—Crick, 8, Trowbridge Road, Bradford, Wilts.

Quarter plate sliding body camera with good portrait lens, working at  $f/5.6$ , by Gaudin Freres, Paris, in perfect condition, price 21s.; approval.—D, 2, Victoria Road, Kensington.

**Changing Bag.**—Changing bag, quarter-plate, 4s.—H., 1, Seymour Place, Fulham Road.

**Dark Slides.**—Cash offers near 7s. 6d. each; three halves, new book-form Instantographs, cash 12s. 6d. each; approval.—Adams, Harold Woods, Essex.

[Trade.]

**Enlarging Apparatus.**—Copper enlarging apparatus, 7 in. condenser, 4-wick lamp, extension front, new (as Fallowfield's fig. 167), 110s., list price, 155s.; Griffiths' enlarging camera, 20s., list price, 30s.—Barloe, Chesset, Torquay.

**Hand-Cameras, etc.**—For sale, £8, Shew's Eclipse hand-camera with three double backs, view finder, and waterproof case, cost £14 2s. 6d., never used; also two dozen Edwards' isochromatic plates, hacked, 7s.—A. B. Price, 16, Finsbury Circus, E.C.

Kodak (Regular) hand-camera by Eastman, No. 4 size, pictures 4 in. by 5 in., in perfect condition, used only on one short tour, complete, in leather case, £7 7s.; approval; deposit.—S. S., 46, Lincoln's Inn Fields, W.C.

Wanted, cash offer, Stereo. Company's 5 by 4 Twin artist camera, complete, with three extra backs and solid leather travelling case, perfect order, list price £19 4s.—Apply, No. 272, office of this paper, 1, Creed Lane, E.C.

Best hand-camera, 5 by 4, Stereoscopic Company's Graphic, for 12 pictures, adjustable focus, rapid rectilinear lens, revolving diaphragms, finders, film carriers, and leather case, cheap, £5; no exchange.—J. A. Be's, 12, Evelyn Gardens, London, S.W.

Be's £12 12s. quarter-plate hand-camera with umbrella tripod, £7 7s.—No. 205, office of this paper, 1, Creed Lane, E.C.

The very thing for Easter holidays. Griffith's hand-camera, leather covered, with finder, £1 2s. 6d.—Kidson, 37, Villa Road, Brixton.

Talmer's perfect automatic hand-camera, carries 12 quarter-plates, new last summer, in perfect condition, price only 50s.; approval if required.—R. F. Housman, Regent Street, Lancaster.

Stereoscopic Company's Dispatch hand-camera, six double backs, cost £12 15s., price £8, an excellent instrument, and equal to new.—Bygrave, 13, Canterbury Road, Brixton, S.W.

Artist's hand-camera, two lenses, one to focus instead of finder, mirror to show picture upright, revolving shutter, changing box for twelve plates attached, size of plate 2 in. square, leather case with lock, handle, and strap, printing frame; approval on deposit. Offers? Would exchange for quarter-plate detective.—Laundy, 6, Buckingham Buildings, Glasgow.

Kodak for sale, price £8. To be seen at 1, Creed Lane.—No. 274, office of this paper.

**Lenses, etc.**—Half-plate Army and Navy R.R. lens, 30s.; also Newman's half-plate shutter, 20s.—Lee, Brynffynon, Rhyddlan, N. Wales.

Grubb cabinet lens, £6 10s.; Ross' W.A. whole lens, £3 10s.; Ross' No. 6 portable lens, £3 10s.; Ross' No. 2 portrait lens, £2 10s.—Biddle, 97, Medlock Street, Manchester.

Ross' extra-rapid universal symmetrical  $f/5.6$ , iris diaphragm, cost £4, 6 in. focus, quite new.—No. 267, office of this paper, 1, Creed Lane, E.C.

Ross' 8 by 5 extra-rapid universal symmetrical (new series),  $f/5.6$ , 9 in. focus, new, price £6; approval with pleasure on deposit with Editor.—H. H. Leigh, 130, Milnrow Road, Rochdale.

**Sets.**—Lancaster's half-plate Instantograph, with 2 double backs, 45s.; Optimus 7 by 5 R.R. lens, almost new, 40s., Robinson's patent four-fold stand, 15s.; stiff canvas case, 10s. 6d.—No. 273, 1, Creed Lane, London, E.C.

Bradley's 7½ by 5 camera, very light, reversible back, all movements, 6 double backs, Dallmeyer whole R.R., Wray 7½ by 5 landscape, Reynolds' 5½ wide-angle lens, tripod, canvas cases, Phantom shutters, mahogany

light-tight box, printing frames, developing dishes, washing trough, all in perfect condition, an Eastman roller slide, 7½ by 5; cost over £25, take £15 for all.—Apply, Dr. Waddington, Lindum House, Arnley, Leeds.

Bargain! Quarter-plate camera, brass-bound, reversing back, rising front, turntable, all movements, lens, double slide, tripod, 25s.—Jas. Logan, 20, Ponsby Street, Liverpool.

Lancaster's quarter-plate 1890 Instantograph, complete, £2 2s., will sell for 25s.—Hamerston, Park Row, Greenwich.

Lancaster's half-plate Optimus R.R. lens, three double backs, instantaneous shutter, stand, case, etc., lot of accessories. What offers?—Wheeler, 90, Northside, Wandsworth Common.

Camera, lens, and stand, one single dark slide, complete, price 10s.—L. Rowland, Chantry, Wilton, Wilts.

Underwood's Instanto half plate, Dallmeyer's R.R. lens, three slides, turntable, and tripod, £6.—Electrician, Littleborough.

Half-plate camera (Marion), all movements, five Compacta backs, single view lens, 45s.; also excellent 5 by 4 mahogany-body camera with focussing screen, one back, portrait lens, rack adjustment, 20s.—C. R., Dundas House, near Reading.

Hard's new form camera and three double slides, 5 by 4, in leather case, only been used twice, cost £9, £5 10s.; Eastman roll-holder, 5 by 4, £1 17s. 6d.; Dallmeyer rapid rectilinear lens, £3; Thornton-Pickard shutter, 14s.—E., 25, Calthorpe Street, Gray's Inn Road.

**Shutters.**—Thornton-Pickard time and instantaneous, also Sands and Hunter's, both whole-plate and good as new, price £2 10s. for both, or 20s. and 40s. separately.—Vesey, Draycott Place, Sloane Square.

**Sundries.**—AMATEUR PHOTOGRAPHER for sale, a great bargain, vols. i., ii., and vi., up to date. For price write, Edwards, photographer, Station Road, Manningtree, Essex.

AMATEUR PHOTOGRAPHER from 1886, cloth bound, "British Journal Almanac" and "Year Book of Photography," ditto, as new, rapid landscape lens, 16 in. focus. Any offers.—Raven, Halifax.

Exchange "Educational Times," second day, for any agreed photographic publication, not AMATEUR PHOTOGRAPHER.—H., 1, Seymour Place, Fulham Road.

Contains valuable photographic information—"Photography," 32 numbers for 1890, 48 for 1891, AMATEUR PHOTOGRAPHER, 28 for 1890, 42 for 1891, cash, or exchange.—Moore, John Street, Lichfield.

## WANTED.

**Background.**—Wanted, good background. Particulars to Johnson, 574, Oldham Road, Newton Heath, Manchester.

**Cameras, etc.**—10 by 12 Meagher camera and accessories.—Address, L. B., 15, Wells Road, Sydenham.

**Dark Slides.**—A double dark-slide for Lancaster's camera, 1891 pattern Instantograph, 10 by 8.—R. Norton, 45, Myrtle Road, Ipswich.

**Hand-Cameras, etc.**—Wanted, hand camera. Particulars and lowest price—C., 27, Gower Street, Peckham.

Good quarter plate hand-camera, also walking-stick stand or four-fold, cheap; deposit.—Ad. Dietsch, 15, Ampton Street, W.C.

Loman's Reflex, Swinden and Earp's, or the Stereoscopic Company's Twin-lens hand-cameras for cash, or part exchange, must be cheap.—Pratt, East Bridgford, Notts.

Wanted, Talmer hand-camera, late pattern, for cash. Full particulars to Dr. Dalton, Wantage, Berks.

**Lenses, etc.**—Wanted, a wide-angle rectilinear lens, 8½ by 6½, by an approved maker, must be in good condition.—Apply, C. W. P., 1, Dent's Road, Wandsworth Common, London.

**Printing Frames.**—Wanted, opal printing frames, quarter and half plate.—Thornton, 15, Bromley Road, Beckenham.

**Sets.**—Wanted, good half-plate set, quarter hand-camera, etc.—Horton, Brayford, Lincoln.

A good quarter-plate camera (Lancaster's Special preferred) with R.R. lens.—Hamerston, Park Row, Greenwich.

**Sundries.**—Wanted, whole-plate camera, Dallmeyer 3D lens preferred, must be by good maker, in first-class condition, and cheap for cash; also retouching desk, head rest, pendulum rocker, and burnisher. Write, stating particulars and price, to E. P., care of Messrs. A. and G. Taylor, 78, Queen Victoria Street, City.

Wanted, whole-plate camera case, also Tylar's current producer.—B., 1, Thanet Road, Ramsgate.

Wanted, album, good condition, to hold small photo prints, also camera carrier for tricycle.—Herbert, Blackrock, Dublin.

Wanted, an amateur photographer to accompany me for a fortnight's holiday in Devonshire, commencing about 12th May.—Walter Hildreth, National Bank, Darlington.

Portable dark-room or tent, whole-plate shutter, Wood's washer, dark slides for 3½ in. square camera.—Anlaby, Marine Parade, Eastbourne.



# The AMATEUR PHOTOGRAPHER

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FRIDAY, APRIL 22, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

**OUR VIEWS.**—Exhibition at Castle Wemyss—Hove Photographic Society—Help for Professionals—Easter Weather—Developing Competition—Next Week's Issue.

**LEADER.**—Notes on Enlarging.

**ARTICLES.**—Photographic Procedure (Wall)—Elementary Photography (Hodges)—The Lantern, and How to Use it (C. Goodwin Norton)—Platinum Toning on Matt-surface Paper (T. O. Mawson)—The Theory of Development (A. M. Levy)—The Position of Stereoscopic Photography (J. Craig Annan)—Toning Slides with Uranium (A. Stieglitz)—Collodio-bromide Lantern Slides (F. Goldby).

**EXHIBITIONS.**—Faversham.

**LETTERS.**—Monthly Competitions (Wm. McEwen).—Cutting down Bottles (H. J. L. J. M.).

**APPARATUS.**—Cresco-Fylma (Hill Bros. and Freeman)—Davenport's Conical Dark Tent—The "Shepherd" Lamp—The "Shepherd" Changing Bag—Griffin's "Rex" Outfit and Developers—Home-work for Amateurs (Lonsdale Bros.)—Willis' Mounts—Wheeler's Anti-halation Paper—Lawrance's Camera Gun—Cooper's Society Camera—Norton's Registering Template—The "Newman" Shutter.

**CATALOGUES.**—Lloyd—Fallowfield—Vevers—Baird—Hinton.

**REVIEWS.**—Exposure Notes.

**SOCIETIES' MEETINGS.**—Cornish Camera—Durham—East London—Fairfield—Hackney—Hexham—Holborn—Hove—Ireland—Jersey—Kensington and Bayswater—Leytonstone—Liverpool Camera Club—Paisley—Richmond—Rochdale—Rotherham—South London—Spenn Valley—Southsea—Stockton—Sydenham—York and Vicinity.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

### TERMS OF SUBSCRIPTION—

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**TRADE ADVERTISEMENTS** are received up to Tuesday morning.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE and EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, and VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE and EXCHANGE Advertisements (at the charge of *Three Words for One Penny*) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

### "Amateur Photographer" Monthly Competition No. 35.—

"INLAND SCENERY, WITH OR WITHOUT FIGURES." Latest day, April 25th.—Prizes: Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, May 13th.)

An exhibition will be held at Castle Wemyss on May 27th and 28th, and the following are the classes and rules:—

**Section I.**—Open to amateurs who have photographed under two years from 1st June, 1892:—

Class I.—Portrait or group, any process.  
" II.—Landscape or seascape, any process.

**Section II.**—Open to all amateurs:—

Class I.—Portrait or group, any process.  
" II.—Landscape or seascape, 8½ by 6½, and over, any process.

" III.—Landscape or seascape, 8 by 5 and under, any process.

" IV.—Instantaneous, any process.

" V.—Animal study, any process.

" VI.—Enlargement, any process.

" VII.—Lantern slides, any process (set of six).

1. All exhibitors must be amateurs.

2. All pictures must have been exposed, developed, retouched, printed, and toned by the exhibitor.

3. All pictures must be sent in mounted and framed. Frames must be rectangular, and pictures under half-plate must be framed in sets.

4. Each frame must bear, either on back or front, full particulars for the catalogue. The exhibitor's name must be on the back of the frame or on a label tied on.

5. A silver and bronze medal will be awarded in each class to the exhibitors whose pictures, technically and artistically, are considered by the judges to be the most meritorious.

6. The judges shall be empowered to withhold either or both prizes in any class should they consider that none of the pictures exhibited in that class are of sufficient merit. The judges' decision shall be final.

7. The first and second prize shall in no case be awarded in any class to the same exhibitor.

8. All entries must be made to Miss Burns, Castle Wemyss, Wemyss Bay, on or before the 20th May. Entries for each class must be accompanied by an entry fee of 2s. 6d., entitling the person entering to exhibit six pictures in the class. An additional fee of 2s. 6d. will entitle competitor to exhibit six more pictures.

9. All exhibits must be forwarded, carriage paid, to Miss Burns, so as to arrive not later than Tuesday, 24th May, at Castle Wemyss.

WE noted a week or so back the disbanding of the Brighton Photographic Society, and are now pleased to be able to record that a new society has been formed at Hove, and that there is, judging from the report we have received, every prospect of its being a success. Mr. J. Williamson, of 144, Church Road, is the Hon. Secretary, and will be pleased to give any information to intending members.

It will be remembered by most of our readers that a movement was projected some time since in our columns for helping some of our less fortunate professional brethren by apparatus, etc. We have received a letter of thanks from one who has been thus helped:—

"I beg to inform you that I have received from Mr. A. R. Lambe



photographic dealer, of Kilburn, London, a half-plate Hockin's Desideratum lens, forwarded by him under instructions from Mr. H. Alcock, of Cricklewood, London, N.W., for which allow me to tender my best thanks to those of your readers who subscribed to the fund, which was mentioned in your paper of last autumn."

We are quite sure there are many of our readers who will be willing to help this fund and have plenty of apparatus, for which they have little or no use.



EASTER is proverbially wet, and it really seemed, however, as though we might possibly escape the usual downpour. Thursday was very fine and warm, notwithstanding a little snow and rain which fell in the afternoon. Friday was as hot and as glorious a day as it was possible to have; it was a perfect day for photography, not much wind, a magnificent light, and yet not too hot, to make one's impedimenta a trouble. But Saturday morning was, at least round Maidstone and N. Kent, a real winter morning, four inches of snow, and at 10 a.m. no prospect of the storm abating, so we were reluctantly compelled to turn tail and come back to town, grievously disappointed, as we had promised ourselves three or four days' good work round Maidstone, which is one of the very best centres we know near town. Many of our readers will have been in the same plight as we were.



IN October, 1890, several letters appeared in our columns as to the starting of a developing competition, but from pressure of work this subject was not carried any further; we now propose in the ensuing months to institute a competition of this character, somewhat on the following lines, and shall be glad to hear what our readers have to say on the matter.

Three plates to be sent to each competitor, one under-exposed, one correctly exposed, one over-exposed.

Any developer to be used, at the option of the competitor.

The details of development to be sent with each competitor's results, the details to include—

- (a) Composition of developer expressed in grains per ounce.
- (b) Time before image appeared.
- (c) Duration of development.



OUR issue of next week will contain a notice of something novel in the way of lenses and printing-out papers. We had hoped to have been able to present our readers with our notes on these subjects this week, but both have been held over by special request. With regard to the new lens, we venture to suggest that it will receive considerable attention from all workers, as being of absolutely new construction, possibly the only new lens since Petzval's lenses of 1841.



## NOTES ON ENLARGING.—V.

### FOCUSSING.

It may be taken as an accepted axiom that the nearer the light is to the condensers and the nearer the condensers to the negative the greater will be the illumination, and the greater the distance between the lens and sensitive surface the less the illumination; or, in other words, the larger one enlarges, the longer one must expose, everything else being constant. There is one precaution necessary when using condensers, or even artificial light of any kind with condensers, and that is, to see that everything is gradually

warmed. Don't turn your light on full power at once, and place it close up to the condenser, and then be surprised if your condenser cracks. Warm everything gradually by having your light low and some distance from condenser, and gradually reduce the distance and increase the light.

It will be obvious to the merest tyro in enlarging that the farther the lens is from the sensitive paper the larger the image, and *vice versa*; and also that there are certain distances which bear a certain relation one to the other, so that when enlarging, the distance between the negative and lens and lens and sensitive surface bears a strict relation to one another. We might digress here into a semi-scientific dissertation on posterior and anterior foci, conjugate foci, etc.; but we decided at the commencement to drop science and talk practice. The approximate distance between the negative and lens and lens and paper may be found from the following formula:—

$$(1) d = f + \frac{f}{n}$$

$$(2) D = (n + 1) f.$$

Wherein  $d$  = the distance between the negative and lens.

$D$  = the distance between the lens and sensitive surface.

$f$  = the equivalent focus of the lens.

$n$  = the number of times of enlargement.

Or to the non-mathematic mind we will put it another way. To find the distance between the lens and sensitive surface, add one to the number of times (linear measurement) the negative is to be enlarged, and multiply by the focus of the lens. To find the distance between the lens and negative, divide the product of the above calculation, or the distance between the lens and sensitive surface, by the number of times of enlargement, and the quotient will be the distance between negative and lens. For example, it is required to enlarge a quarter-plate negative to  $16 \times 12$  with a 6-inch lens.  $4\frac{1}{4} \times 3\frac{1}{4}$  enlarged to  $16 \times 12 = 4$  times (linear). The distance will be then approximately  $(4 + 1) \times 6 = 30$  inches, between lens and sensitive surface. To find the distance between lens and negative  $30 \div 4 = 7\frac{1}{2}$ .

To save trouble, however, there are well known tables which have been calculated for enlargements with lenses of varying foci. These tables will be found in most textbooks, and therefore we do not consider it necessary to introduce the same here.

The distances given in the tables will be found to be approximately correct; but in all cases accurate focussing should be obtained by adjustment of the screen or lens by rack and pinion. Whilst many operators are content to use merely a white piece of paper, and to focus from the front, it will be found far preferable to use the ground-glass screen and compound focuser above described.

In all cases where marginal definition is defective, stops or diaphragms must be used, exactly as in field work.

Having obtained a sharp focus, the next operation is placing the sensitive paper in position. The methods adopted for this are slightly different, some operators preferring to use a cap in which a piece of yellow or ruby fabric or glass is placed, so as to illuminate the surface focussed on. Others, again, cap the lens as usual, and use a ruby lantern to place the paper in position; we prefer the former plan, because, when orange glass is used in the cap, it enables one to ascertain whether any alteration in focal sharpness of the image takes place, as this may sometimes occur from the sensitive paper buckling.

Another point is the method of fastening the sensitive surface to the easel board if this be used. Of course, if the large printing frame be used, as we have suggested, there will be no difficulty about this point; but when the paper has to be affixed to a board there is a slight difficulty. One



plan we have tried with success has been to have a quarter inch groove cut in the face of the easel board along one side or the top, and in the groove a piece of stout steel or copper wire, preferably the former, is placed, and the ends of the wire are turned over the sides of the board, and passed through stout brass eyelets, and then provided with a screw thread, on which fits a milled nut. The action of this wire is merely to clip the paper in the groove, and if such a groove is placed at top and bottom of easel board, it is possible to clip the paper firmly under one groove, and then to pass it under the other, and stretch it taut, and then screw up the milled nuts. Another method is to use large-headed drawing pins at the four corners, or to use broad indiarubber bands. The advantage of using some broad surface like the head of a drawing pin is that it enables one to accurately determine whether the whites of the enlargement are pure or fogged. The following letter from Surgeon-General J. L. Ranking appeared in the *AMATEUR PHOTOGRAPHER* of November 28th, 1890, which is, we believe, the first time attention has been called to this point:—

**"CURVATURE OF FIELD IN RELATION TO ENLARGING.**

"SIR,—Although the effects of 'spherical aberration' in lenses, and the means necessary to be taken to correct it in relation to 'curvature of the field' are taught even in the more elementary works, and the desirability is recognised of receiving the image upon a curvilinear instead of a plane surface (a measure inapplicable to glass plates, but possible with flexible films and paper), I do not remember that any instructions upon enlarging suggest that a curvilinear surface should be given to the easel upon which the image is received. In enlarging from a small (quarter-plate) landscape negative, even if it be technically good, it becomes necessary, if the image is to be sharp to the margins, to stop down the lens considerably—of course at the expense of illumination and exposure; and when enlarging by artificial light, with many of the slower bromide papers exposure becomes inconveniently prolonged. But if a curvilinear form be given to the easel, the full aperture of the lens can be used, reducing exposure to a minimum.

"I have applied this principle to my easel in the following manner:—The centre of a sheet of paper 16 by 12 in., my usual size for enlarging from a quarter-plate negative, being pinned to the easel top and bottom, a wedge-shaped piece of wood was passed beneath one end of the paper till the margin of the picture was equally sharp with the centre. The distance to which the margin was advanced towards the lens was found to be 1 in. Two pieces of wood were then prepared 12 in. long and 6 in. wide. They were then planed down so as to form two wedge-shaped pieces 1 in. deep at outer and 1-8th inch at inner edge. These were then screwed down upon the easel, and to them a thin piece of cardboard fixed, thus forming the required curved surface. Upon the picture being sharply focussed the sheet of sensitised paper is pinned. With Ilford rapid paper and the artificial light I use, which I shall presently describe, and using an R. R. lens, 8-inch focus, at full aperture, an exposure of from 8 to 10 seconds suffices to enlarge from a quarter-plate up to 16 by 12. If a longer exposure be necessary, as it is in enlarging from landscape negatives, into which skies have to be introduced, the lens can be stopped down to any extent, the exposure being calculated upon the well-known ratios of the squares of the diameters of the stops, or a slow paper can be used. The artificial light I use is the Welsbach incandescent gaslight, said to be 16-candle power, and I find it most convenient. It is attached to the nearest gas-bracket by a flexible tube, and it can be lighted and extinguished in a moment."

## Letters to the Editor.

### MONTHLY COMPETITIONS.

SIR,—It is with great reluctance that I ask you to permit me to say a few words on the result of the last Monthly Competition of our esteemed paper, and I only do so hoping that it will lead to further criticism, and end in being a gain to the unsuccessful competitors.

It might seem hard on the judges. We know the amount of labour and the great responsibility that lies with them, but surely you would not have us keep our tongues still on that account.

Well, sir, with reference to the picture that took the Silver Medal—if that picture is to be criticised—I have nothing to say; I leave it to more accomplished workers than myself to find fault with it; but in my humble opinion it fully deserves first place, if those are the best contributions which have been reproduced. As for No. 2 (which takes the Bronze Medal), well, I am very sorry to see that No. 3 (certificate) has to take second place to it. I have always been taught, and have learnt from my art books to look into prize pictures, and I would always find something striking—something which immediately arrests the attention. I find it is the case, and most conspicuous in the cases of No. 1 and No. 3; but the only striking part about No. 2 is that it is a painful photograph and quite unworthy of the position it occupies among those reproduced. I think with two such children it would have been quite as easy for this competitor to have made a picture as taken a photograph of them, in which the little girl is hardly able to contain herself for laughing, an expression most objectionable when it does not form part of the meaning of the photograph, and is never seen in a picture made by photography; harmony exists, as far as dress and surroundings is concerned, but when we have said that we have done.

With No. 3, though fault might exist, I am not the critic to point it out; but art exists to no little extent in that picture.

With regard to No. 4, surely this competitor is worthy of a better representation of his work than this. If we look first at the attitudes of the standing figures and then at the title, we will notice that there is something wrong. Perhaps it is because unity has been forgotten; on any account, whatever there is in it to take fourth place I cannot make out.

I have gone far enough. It is a true saying that good art conceals art, but when the art is not in the photograph, then we must admit that the concealment has been carried a bit too far or else never thought of.

I have entered several competitions held by the *AMATEUR PHOTOGRAPHER*, mostly lantern slides, and in my opinion the winners have always been rightly placed, and I have always bowed to the superiority of their work; but I cannot bow to the inferiority of work as contained in Nos. 2, 4, and 5; and now I am at a loss to know what I am to try to achieve so as to gain a place in these competitions.

Thanking you in anticipation of the insertion of this letter that it may lead to a discussion on the merits of the photographs reproduced, so that those on the wrong track may be set right, and those ignorant of art may learn, I am, Sir, your obedient servant,

WILLIAM MCEWEN.

\* \* \* \*

### CUTTING DOWN BOTTLES.

SIR,—In answer to "B.'s" query *re* the cutting down of glass bottles for measuring glasses, I can only say that I prefer to use a diamond, as I have one of those most useful tools. "B" might try cutting all round the bottle with a new three-cornered file, and the deeper he cuts the better.

Another plan is to fix a piece of iron wire in a fret-saw frame, moisten this wire with fine emery powder made into a paste with water. This is not so easy as the file plan, but it saves the expense of a new file, at any rate.

"B" will not succeed with the first bottle, but must try again.

H. J. L. J. M.



We learn that Mr. Alex J. Jones, who has entered the firm of J. Levi and Co., was the representative of Joseph Levi and Co., and not of the firm to which he has now been admitted as a partner. On the termination of Mr. Jones' engagement with Joseph Levi and Co., he left their employment, and entered into a rival firm as partner. He was known as the representative of Messrs. Joseph Levi and Co. only.



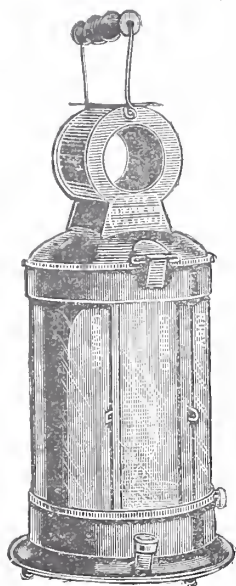
## Apparatus.

### CRESCO-FYLMA.

MESSRS. HILL BROS. AND FREEMAN, of Victoria Road, Surbiton, S.W., have again sent us a sample of their enlarging solution, and we find it fully up to the standard of the first. To those of our readers who have not tried it, we strongly recommend it as being the solution of the problem how to enlarge with a minimum of outlay. Full notes on this subject will be found on p. 459, vol. xiv.

### DAVENPORT'S CONICAL DARK TENT.

In our issue of March 25th, p. 245, a correspondent, Mr. C. J. Davies, suggested a new portable dark-room which should take the form of a bell tent, and Messrs. Davenport and Co., of 32, Parkhouse Street, Southampton Street, Camberwell, immediately set to work to carry out the idea, and now they have sent us the first tent they have made. It is made to hang up to a curtain pole, rod, or even gas bracket at a push, and after having tried it during Easter we can recommend it as a convenient and perfectly comfortable and safe makeshift for the tourist or holiday-maker. The price is 27s. 6d.

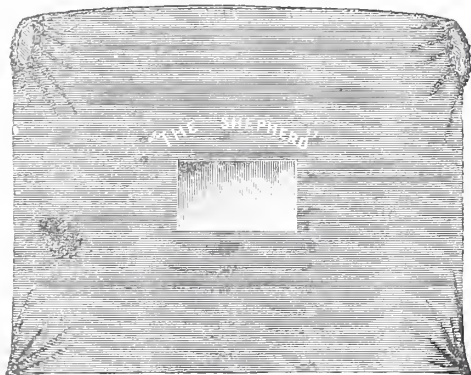


### THE "SHEPHERD" LAMP.

Mr. H. E. Shepherd, of "The Ferns," Barking Lane, Ilford, has introduced a new lamp of circular form, fitted with a ground glass front and sliding side pieces of yellow and ruby glass which can be shifted in a second, and are interchangeable at will. For transit these glasses can be removed and packed separately. It is fitted with a novel ventilation shaft and burns petroleum, the body being filled and the flame regulated from the outside. Price 11s. 6d.

### THE "SHEPHERD" CHANGING BAG.

A new form of changing bag, which folds up into a very small compass, so that it can be easily carried in the pocket. A small sheet of ruby glass let into the side gives a safe light in the



interior. It can on an emergency be used for storing plates in, or as a focussing cloth. Price 6s.

### GRIFFIN'S "REX" OUTFIT.

MESSRS. J. J. Griffin and Co., of 22, Garrick Street, Covent Garden, W.C., have introduced a very well made camera with conical bellows, with long focus swing and reversing back, rising and falling front. The set includes an efficient R.R., working at  $f/8$ , one dark slide, polished pine tripod, which is very rigid when set up, and one dark slide. A pneumatic drop shutter is also provided, which can be arranged for time or instantaneous exposures. The whole forms a very efficient set, and at the reasonable rate of £6 6s. is well worth attention.

### GRIFFIN'S OXALATE AND IRON DEVELOPER.

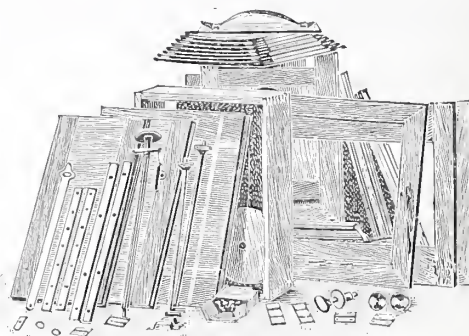
A very convenient form of sending out this developer, as the iron solution is sent out in six separate sealed tubes, each containing sufficient to make about  $3\frac{1}{2}$  oz. of developer; the oxalate in one bottle accompanying the tubes. The developer acts well both for bromide paper, lantern slides or plates, and the iron solution in this form will, as is well known, keep better than in any other.

### GRIFFIN'S "EXCELLENT" MOUNTANT.

A practical mountant, always ready for use, allowing the print to be shifted about until in correct position, and possessing good adhesive power.

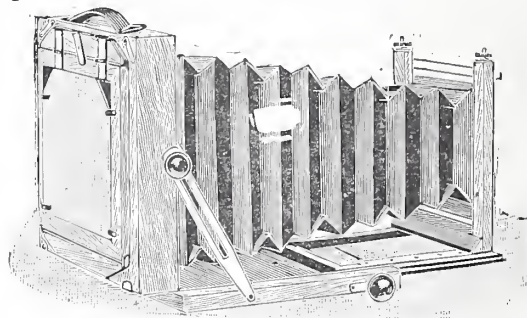
### HOME WORK FOR AMATEURS.

Lonsdale Bros., of 3, Cookridge Street, Leeds, are issuing all the various fittings and woodwork necessary for the completion of a camera and one double dark slide, either with the brass work



finished and lacquered, or also this even left for the amateur camera maker. The woodwork is just sufficiently advanced for the amateur to finish with the usual hand tools, the baseboard being already clamped and ploughed for the rack and pinion, the body dovetailed, the bellows frame, focussing screen frame, extending frame, and reversing back mitred, keyed, and glued up, the front turned out for circular disc, and the slide shutters rabbeted and clamped. Fig. 1 shows the various fittings, and fig. 2 the camera complete.

The "Northern" tripod may also be had in parts, and the amateur with a hankering after home-made apparatus can revel at his will in fitting the above up. The circulars describing how to fit up the camera, etc., may be obtained free for a halfpenny



stamp from Messrs. Lonsdale, or post free for fourpence, with the "Cyclopaedia of Brasswork." The useful little work we have already noticed.

### WILLIS' MOUNTS.

MESSRS. W. H. Willis and Co., of 80, Long Acre, London, W.C., have submitted samples of their mounts, and after testing the same, both practically and chemically, we can affirm that they are well made, free from injurious chemicals. Messrs. Willis and Co. are actual manufacturers, and from the prices quoted in their advertisements, and the samples before us, our readers will gain considerable advantage in going direct to them. Gilt flat and gilt bevelled edge mounts are offered, and India tints, and plate sunk mounts in all varieties. Gold and colour blocking is also undertaken, and special sketches for the backs of mounts are drawn and submitted for approval.



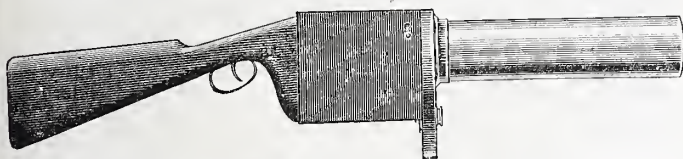
## WHEELER'S ANTI-HALATION PAPER.

Geo. Wheeler and Co., of 46, King Street West, Manchester, have forwarded us a sample of their anti-halation paper, which is extremely convenient and cleanly in use and of practical benefit. For all outdoor work we have recommended times without number the backing of plates, and now that the operation is so much facilitated, everyone should adopt this precaution against halation, flatness, and want of general brilliancy.

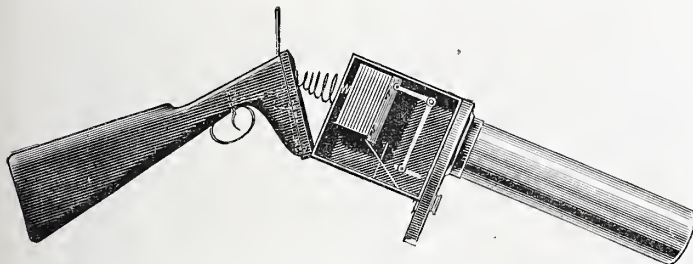
Wheeler's Cardboard Protecting Masks are certainly among the most useful novelties for tourists. Anyone who has taken plates away on tour knows the trouble of placing the exposed plates back in the boxes so that they will not scratch, rub, or become marked by the dividing papers. The masks in question are mere frames cut out of pure cardboard, and rest only on the margin of the plates and take up but little room. They form a very efficient protecting and separating medium. We predict a big sale for these as the holiday season comes on.

## A CAMERA GUN.

Mr. C. Lawrance, of 141, Fulham Palace Road, S.W., has introduced a new camera gun for plates or cut films, which are retained in a book formed of zinc or metal sheaths, the changing



being effected by pressing a knob. In the figures the complete gun is shown, and also the particular method of inserting the plates, and the arrangement of the same in the camera. The shutter is a revolving plate, and is placed between the lens and



camera proper, the barrel is graduated so as to enable focussing to be effected, and suitable sights are provided.

There are many occasions when an instrument of this kind may be useful, and for an amateur sportsman it would be useful, as being a ready means of testing his sighting.

## COOPER'S "SOCIETY" CAMERA.

Mr. B. N. Cooper, of 54 and 56, Chestergate, Stockport, has forwarded for our inspection, a speciality he is now placing upon the market, in the shape of the above cameras. The bellows are slightly kinnear, but do not, even with wide angle lenses, cut off any portion of the view. The front fixes into place by two spring catches, and is provided with the usual rising and falling movement. For use with wide-angle lenses the back will slide forward, and a special arrangement is provided, by means of which exceptionally short focus lenses can be used. The workmanship and finish of the camera is excellent, and with three well made dark slides sells at £5.

## NORTON'S REGISTERING TEMPLATES.

Mr. C. Goodwin Norton, of 38, Marchmont Street, Russell Square, London, W.C., has forwarded a pair of registering templates, the method for using which we clip from his useful articles "The Lantern and How to Use it" now appearing in our columns:

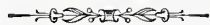
"Norton's registering templates are not photographed, but made by a mechanical process which ensures their being absolutely identical. They can be used to test whether two or more lenses are of the same focus, also for flatness of field, and to ascertain whether the lens is rectilinear. These can be obtained at 2s. each. To test

for flatness of field, procure a piece of the finest muslin and fix it between two cover glasses the same as a lantern slide, place it in a frame, and if necessary, wedge it close to one side all round, so that its whole surface shall be square to the centre of the rays of light when in its place in the lantern. Focus this on the screen, which should be parallel to it, and notice whether the projection is sharp all over, or if there is any variation between the centre and the edges. This will be found a much better test than a photographic slide, because the lens that was used to take the photograph may not have produced a perfectly flat picture. Photographic lenses can be tested in this way for flatness of field if the lens can be applied to the front of the lantern, but it should be noted that while flatness of field with full aperture is practically all that is required of a lantern lens, it is only one of the requirements of a photographic lens. To test for equality of focus, place one of Norton's registering templates in the stage of each lantern, and focus sharply; now adjust the two discs until the two squares formed by the lines on slides coincide. It will be at once seen whether the two lenses are the same focus."

After a practical test we can state that these are very efficient, and the price speaks for itself.

## THE "NEWMAN" SHUTTER.

This well-known and favourite shutter has been still further improved by Messrs. Newman and Guardia, of 71, Farringdon Road, and is now much lighter and more suitable for the modern light cameras. The old form is still made, but even at a slightly increased cost, the new one is to be preferred.



## Catalogues.

FRED V. A. LLOYD, 5, South John Street, Liverpool.

Mr. Lloyd has lately succeeded to the business carried on by H. Newton and Co. since 1851 at the above address, and has issued a complete little catalogue of fifty pages replete with all requisites for photography, and the same will be sent on application.

FALLOWFIELD'S PHOTOGRAPHIC REMEMBRANCER. April. Pos free.

Jonathan Fallowfield, when he moved into 146, Charing Cross Road, thought he was going to have room enough, but now finding he has not, is offering some ridiculously cheap bargains, such as dry plates from 3d. per dozen, and cameras varying from 5s. to £5. Any of our readers with some spare cash should just read this, and then hurry up, as the early bird will catch the worm.

C. C. VEVERS' QUARTERLY SECONDHAND AND JOB LOT LIST.

Mr. Vevvers, Horsforth, Leeds, issues a four-page leaflet, with some very good secondhand bargains of all sorts.

TABULATED CATALOGUE OF PHOTOGRAPHIC REQUISITES.

Mr. A. H. Baird, of 15, Lothian Street, Edinburgh: A handsome catalogue containing, amongst useful requisites, the following novelties: a direct vision finder, the Lothian gas lamp, a portable syphon, the Todd-Forret lamp, silhouettes, lantern-slide mask and binder combined, and glass etching plates.

HINTON AND Co., Pharmaceutical and Photographic Chemists, 38, Bedford Street, Strand, W.C.

A carefully-compiled, well-printed, and illustrated catalogue of over 75 pages, containing information of all the leading general requisites, and of Hinton's well-known solutions in particular.



## Reviews.

*Exposure Notes for use with Watkins' Exposure Meter.* Second edition. Published by R. Field and Co., 142, Suffolk Street, Birmingham. Price 1s. 6d.

This little pocket book forms an almost indispensable adjunct to every user of Watkins' Exposure Meter. It contains about sixty pages for entries of exposures, and in this the second edition the pages are ruled, making it more useful. Besides this, it contains several useful formulae and notes on exposure, and a very clear explanation of the use of the aforesaid meter.



## Photographic Procedure.

By E. J. WALL,

Author of the "Dictionary of Photography."

### SECTION V.

#### THE SENSITIVE MEDIUM AND ITS SUPPORT.

**Cold Emulsification.**—This process is not very reliable, because the degree of sensitiveness depends solely, or to a great extent, upon the temperature of the air.

Henderson's original process is as follows:—Allow 2 to 3 parts of gelatine to swell in 75 parts of distilled water, and then dissolve at a temperature of 50 deg. C. (=112 deg. F.), and add 3 parts of pure carbonate of ammonia, then add 22 parts of bromide of ammonia and 3 parts of 10 per cent. solution of iodide of potassium. Finally add 200 parts of alcohol (92 per cent.) and 9 parts of solution of ammonia (sp. gr. = 0.91).

Dissolve 30 parts of nitrate of silver in 150 parts of water, and now, in the dark-room, add the silver solution in small portions and with frequent shaking to the alcoholic bromide solution. The mixture should now be shaken frequently for two hours, the flask being closed by means of a cork, and the whole allowed to stand ten hours, or if made in the evening, till the next morning.

Forty parts of Winterthur gelatine must now be covered with distilled water, allowed to soak for half an hour, and then, after pouring off the surplus water, it should be melted and added to the emulsion, which should be heated to 35 deg. C (= 76 deg. F.) The whole must now be well shaken and poured out into a flat dish to set, and this should take place in an hour or two; and then broken up and washed.

In the winter it will be difficult by this process to obtain a sensitiveness greater than about 15 deg. W. after the emulsion has stood ten hours. In the summer, however, as high as 22 deg. W. may be obtained, but there is a danger, if the emulsion is allowed to stand more than eight hours, of fog setting in, or of obtaining thin emulsions of no value in practical work.

Henderson's original method was to pour the liquid emulsion into three or four times its quantity of alcohol, and stir with a glass rod; when the emulsion adhered to the rod, it was removed, cut up, and well washed.

Henderson has since suggested another process of making emulsion, which is somewhat similar to one proposed by Obernetter in 1882. I give the report of the lecture as printed in the *British Journal of Photography*, as some of the preliminary remarks are well worth reading:—

"Mr. Henderson then proceeded to give his promised demonstration of a perfect emulsion by a new method; but, before doing so, briefly dealt with some of the principal points in emulsion-making. It was important, he said, to have pure water; he always experimented with distilled water, and recommended its use. A great many failures were due to impure water, and he read a list of the common impurities generally found in it, and pointed out that by employing ordinary water in emulsion-making certain silver salts are liable to be formed in the emulsion, which are not amenable to some developers, and that, therefore, unequal results are produced. There were various ways of making emulsion, and he enumerated and described some of them, among them the boiling processes, which, he considered, produced decomposition of the gelatine, and consequently fog in the image. Incidentally, on the question of the gelatine employed, he remarked that this substance often contained sulphurous acid, which would have an injurious action on the silver bromide. Then there was the precipitation process, in which no washing was required, as well as his own plan of emulsifying with ammonia, for which the late Dr. Van Monckhoven had often been given credit. He (Mr. Henderson) was the first to publish the method. The method he proposed to show them that evening consisted of the conversion of the silver nitrate into carbonate, and the introduction of the latter into a solution of bromised gelatine, or *vice versa*. Thus the silver nitrate at no time came into contact

with the gelatine. He then proceeded to convert a solution of silver nitrate into carbonate by means of a solution of carbonate of potassium, and, having dissolved the gelatine in a small quantity of water added the bromide to it, and mixed the two solutions. The iodide, said Mr. Henderson, should be added after the bromide, as iodide of silver was formed quicker than the bromide. The emulsion was washed by being forced into shreds through a large mesh into a sieve placed in a jar of water, soluble salts being carried off by a metal pipe. He condemned the use of canvas, and said less washing was required by his method. Many failures were caused by impure rubber piping. He recommended the black kind, the red and grey varieties containing sulphur, which causes spots in the emulsion. He exhibited a small filter for water which he had found useful and effective; it was a tube about six inches long, with a piece of sponge at each end, and the centre filled with charcoal. By reversing the filter on the top it was self-cleansing. Mr. Henderson filtered his finished emulsion through washleather, hastening the process by pneumatic pressure. He then showed a coating mug, the emulsion passing through a piece of muslin; he usually had a piece of fine silver gauze. By this means he avoided bubbles. The action of the centrifugal separator in removing the soluble salts was then shown. Concluding, Mr. Henderson said that, if he wanted an emulsion giving clear shadows and great density, he would convert the silver nitrate into acetate or citrate, instead of carbonate, and such an emulsion would do for line or lantern slide work. He strongly recommended that, in ripening by heat, uniform temperature and bulk of water be employed. He further said that impurities in chemicals must be guarded against, and mentioned the instance of a pupil of his whose bromide, when tested, was found to contain one-third of another substance, which the manufacturer subsequently admitted. Another pupil got spotty pictures, which he (Mr. Henderson) found to be due to the deliquescent iodide containing some sulphates. The formula he now recommended as a good base:—

|                     |     |     |     |     |     |              |
|---------------------|-----|-----|-----|-----|-----|--------------|
| Silver nitrate      | ... | ... | ... | ... | ... | 120 gr.      |
| Water               | ... | ... | ... | ... | ... | 3 oz.        |
| Potassium carbonate | ... | ... | ... | ... | ... | 60 to 90 gr. |
| Water               | ... | ... | ... | ... | ... | 3 oz.        |
| Gelatine...         | ... | ... | ... | ... | ... | 240 gr.      |
| Potassium bromide   | ... | ... | ... | ... | ... | 90 "         |
| Potassium iodide    | ... | ... | ... | ... | ... | 1 "          |

The gelatine to be dissolved in sufficient water, and the emulsion to be made up to fifteen ounces. He preferred to do without alcohol. A washed emulsion of this description, if treated with a solution containing two grains of potassium nitrate, one grain of potassium bromide, and half a grain of chrome alum in ten or fifteen ounces of emulsion, and allowed to stand at a temperature of from 80 to 90 deg. for some hours, increased in rapidity, and also gave more density. If the salts are to be removed by the centrifugal separator, it would be necessary to have the bromide dissolved in a small quantity of gelatine, say, fifteen grains, and then, when separation had taken place, the bulk of gelatine added; a still finer precipitate will ensue by the addition of gelatine to the formed carbonate of silver. In emulsions required for subjects of great contrast, more iodide and gelatine will be found advantageous."



**Blackheath Camera Club.**—This Club, of which Mr. W. H. M. Christie, Astronomer Royal, is President, celebrated the close of its first winter session on Wednesday, the 6th inst., at the Art Club, Blackheath, by holding a *conversazione* and exhibition of members' work, the large hall being crowded with ladies and gentlemen who had accepted invitations. The numerous exhibits on the walls and tables consisted solely of specimens of members' work, including prints and transparencies of various sizes, fully representing the popular processes of the art, among them being several life-size enlargements. Among the contributors may be mentioned Miss Smith, Dr. Ernest Clarke, Messrs. J. T. Field, D. R. S. Smith, E. Hawkins, H. Sandland, A. W. Young, W. F. and F. E. Butcher, Dashwood, D. and H. Wayland, Junks, Kentish, Pope, Dowridge, Stericker, Belshaw, Lightfoot, Desforges, R. W. and A. W. Carter, S. B. and T. B. Earle. A prominent feature of the evening was a display of the "American Amateur Photographer" slides, thrown on the screen by a lime-light lantern manipulated by the curator, Mr. W. Farrington, the subjects being announced by the Rev. W. P. MacDonald. Most of these were beautiful pictures of transatlantic scenery, and were greeted with rounds of applause. The members' exhibits disclosed some first-rate work, and received high commendation. The proceedings were agreeably interspersed with vocal and instrumental music, and light refreshments were served in one of the upper rooms. During the summer months periodical visits to places of interest will be arranged for members of the Club, who now number between seventy and eighty. New members desiring to join should lose no time in communicating with the Honorary Secretary, Mr. T. B. Earle, the Cottage, Handen Road, Lee.



## Elementary Photography.

By JOHN A. HODGES.

### CHAPTER XII.

#### PRINTING UPON ALBUMENISED PAPER.

Preliminary Considerations—A Good Negative Described—An Album, "Not for Exhibition"—Ready Sensitised Paper—How to Print—Precautions—When to Arrest the Process—"Slipshod" Work—Toning—Fixing—Washing—How to Wash the Prints Effectually without a "Washer"—How to Avoid Blisters—Drying the Prints.

If the reader has carefully followed out the instructions contained in the foregoing chapters, he will probably have succeeded in producing some negatives from which he will be anxious to obtain prints. The negative, of course, is only a means to an end, and, from an artistic point of view, is anything but pretty, all the lights and shades of the view being reversed, those portions which represent the high-lights being dark, and the clearer portions of the plate representing the shadows. This being the state of things, the beginner will doubtless experience some embarrassment in forming a correct judgment as to what constitutes a good negative, nor is it, indeed, a less difficult matter to offer useful instruction in a handbook. If at this stage he can obtain the advice of a photographer, such aid will be invaluable to him. Failing that, he should submit his negatives to the Editor of the AMATEUR PHOTOGRAPHER, who would, doubtless, put him on the right track. He should also purchase an album, into which he should make it a rule to paste a print from every negative he prints from, writing underneath it full details of the exposure and development of the plate, the paper used in printing, the toning bath employed, etc. This will prove a most valuable record of progress, and will enable him to see what improvement he makes as his photographic education advances. But, to be of educational value, *all prints, whether good, bad, or indifferent*, must take their places in its pages.

Those entering the ranks of photography at the present time have a large number of different printing processes from which to choose, but it is obviously impossible to refer to all of them in detail in the pages of an elementary textbook. I therefore propose to describe but three—namely, silver printing on albumenised paper, silver printing on gelatino-chloride paper, and printing on gelatino-bromide paper. The first two of these are what are termed "printing out" processes—that is to say, the action of light produces a visible image during the process of printing—while the third is what is known as a "development process;" that is to say, the prepared paper requires to be developed after exposure, in order to make the image visible.

I will first deal with printing upon albumenised paper, and the necessary operations may be divided into "printing," "toning," "fixing," and "washing." Some ready-sensitised paper will be required. Let it be purchased from a respectable dealer, for it will be difficult, if not impossible, to obtain good results from cheap paper. If of good quality, it will cost about 10d. a sheet, and, for a first experiment two sheets will be sufficient. If negatives of one size only are to be printed from, it may be purchased cut up to the proper dimensions (in our case half-plate), otherwise the full sheets will be found to measure 22 by 18. It will keep in good condition for some considerable time if properly stored, and kept in a dry place. The way I keep mine is to cut it up to the required size, fold several sheets of stout white blotting paper over it, placing the whole under pressure in a printing-frame away from the light in a drawer.

The dark-room table having been carefully wiped with a

clean duster, the printing frames are laid upon it, and the springs being loosened, a varnished negative is laid inside and allowed to rest upon the rebate. A piece of the sensitised paper is then laid face downward upon the negative, care having been taken to only touch the sensitive surface at the extreme edges, otherwise finger marks would probably show in the finished print. Two or three pieces of stout blotting paper, the exact size of the negative, should then be laid on the top, the back of the printing frame then being closed and the springs readjusted. A moderate amount of white light may be employed for carrying out the foregoing operation, just enough to comfortably see by, but if sun-light should fall upon the window, a piece of yellow tannin should be temporarily hung up, for although the sensitised paper is far less rapid than a gelatino-bromide dry plate, yet it would rapidly darken if exposed to rays of white light. All the frames having been filled, they will then be ready for the next operation of printing. It will be best not to print in the sun; indeed, unless the negatives are abnormally dense, better results will generally be obtained in diffused light. They should be exposed to light, therefore, by placing them flat upon a window-sill upon which the sun does not shine. As in taking the negative, the duration of the exposure cannot be ascertained by rule. It will vary with the strength of the light and the density of the negative. The actinic power of light varies in England enormously; a negative which will give a good print in ten minutes in diffused light in summer, might require a whole day in winter. The facilities for judging correct exposure are, however, in this case far greater, for the operation may be watched as it proceeds. Supposing the day to be a bright one in either summer, autumn, or spring, the frames may be brought in for inspection after an interval of about ten minutes. The frame is held firmly, and one of the springs gently removed, and the hinged back folded over. The print may then be examined by carefully lifting the pads and paper, taking great care not to shift their position, which would cause a double image, and consequently a blurred print. We shall now see the picture in its proper light and shade, and every delicate detail of the negative will be reproduced in the print. If the printing has gone far enough, the whole of the detail will be visible, and the picture will be of a rich reddish chocolate colour. We must, however, not stop the process at this stage, but continue the printing until the shadows look heavy and the detail in them disappears. At this stage, probably, if the negative is a suitable one, the darkest portions of the print will assume a bronzed appearance; when this happens, the print may be removed from the frame, and a fresh piece of paper inserted. Our reason for thus over-printing is that the subsequent operations of toning and fixing considerably reduce the print, and had we stopped the printing at the moment when it *looked best*, we should have had but a poor, weak, faded picture by the time all the subsequent operations were completed. Although printing is a simple operation, it must be performed carefully if good results are to be obtained. Many amateurs seem to think that the duty of looking after the frames may be delegated to anyone, a sister, a cousin, or a younger brother, or, indeed, in some cases stick the frame up in a window in the morning, leaving it until they return from business, trusting to chance that the proofs are not over-printing. Such methods will never succeed. It is best to postpone printing operations until a morning or a day can be devoted to the work, in which time a good many prints can be got off. It is better and more economical to print and tone two or three dozen at a time than to do only one or two. It is not absolutely necessary to tone and fix the prints directly they are printed, but it is always better to do so



when it is possible, as the results are generally finer. When it is impossible to do this, the prints, previous to toning, should be kept between blotting-paper under pressure in the same way as the unprinted paper. The best negatives for printing in silver are those which are fully exposed and not too dense, but which show a good range of gradation. Silver printing, however, is the most accommodating of processes, and passable results may, by the exercise of a little care, be obtained from inferior negatives. For instance, very thin negatives should have a piece of ground-glass placed over the frames during printing, and should be slowly printed in a weak light. Dense negatives, on the contrary, will print better in a strong light, or even in sunshine.

Before proceeding to tone the prints, put all dishes, chemicals, etc., used in developing out of the way, and wipe down the table, for the least contact with foreign matter will ruin the prints.

Take one of the large deep porcelain dishes, fill it with clean water, and put in the prints one by one, allowing the water to run slowly upon them from the tap. The object of this washing is to remove the unaltered nitrate of silver, which is represented by the white or lighter portions of the print; during this operation, the yellow tammy should be hung in front of the window. The washing water will at first have a very milky appearance, due to the dissolved silver, but in a short time this will disappear. While the prints are washing, the toning bath can be got ready. The dish which we reserved for this operation should be placed upon the table and half filled with the toning solution, the mode of preparing which was described in the chapter upon chemicals. The amount necessary to tone two sheets of paper will be about 16 oz., in which there should be about 2 drms. of the gold solution—equal to 2 gr. of chloride of gold—one grain of gold being usually sufficient to tone a sheet of paper. The prints having been sufficiently washed, denoted by the water ceasing to present a milky appearance, are placed one by one, face downwards, in the toning solution. Not more than four or five at a time should be toned at first, or it will be found difficult to stop the toning action at the right moment. The prints must not be allowed to remain stationary, or they will tone unevenly, but must be lifted and carefully turned over and over, those at the bottom being placed at the top. Their colour when removed from the washing water was a bright fey red, but immersion in the toning bath will gradually turn them through brownish red to purple; when the latter colour is reached, they should be removed from the toning bath and placed in a dish of clean water. When all the prints have been toned, the glass funnel with a filter paper inside is placed in the neck of the bottle which holds the solution, which is allowed to filter back into it. The requisite quantity of gold solution to make up to its original strength (in this case two drachms) should then be added, and the bottle put away for future use. It should be kept in a dark place, as light causes its decomposition by precipitating the gold.

The next operation is fixing, but before attempting this make it an invariable rule to wash out and put away the dish used for toning, for it is only by adopting such measures that immunity from stains can be ensured.

The fixing bath consists of a solution of hyposulphite of soda, but in this case it should be freshly mixed, and not made from the stock solution. To prepare it, put 3 oz. of hyposulphite crystals in a clean dish—not that used for fixing negatives—and pour thereon a pint of warm water, adding about ten drops of liquid ammonia. By the time the crystals have dissolved, the solution will be cold. It should not be used warm, or blisters may be caused in the

prints; and the prints may be immersed one by one. Directly they come in contact with the solution they will lose their beautiful colour, and assume a sickly, unpleasant yellowish-red colour. This, however, will pass off as the prints become fixed, and ultimately they will almost regain their original appearance. They should be allowed to remain in the fixing bath for about 12 minutes, being turned over once or twice during that time. The fixing bath may then be poured away, and the dish filled up with water from the tap. Now, silver prints have, not undeservedly, it must be confessed, when we look at the contents of an album, acquired a very bad reputation on account of their fugitive character, but this is in a large degree due to imperfect fixation and insufficient washing after fixation. It is, therefore, absolutely essential to thoroughly free the prints from the least trace of hyposulphite of soda, and only thorough washing will effect this. If it can be afforded, a "print washer" should be purchased. There are many different patterns to choose from, some of which do their work better than others. Wood's washer is thoroughly efficient and cheap; so also is Tylar's "Whirlpool" washer. It is, however, quite possible to get rid of the hypo in the prints without resorting to the use of a washer. After pouring away the fixing solution, the dish should be filled up with water, and the prints carefully turned over and over, the dish being then emptied, and the process repeated several times. A brown earthenware pan, about 14 inches in diameter, should then be placed on the grid underneath the tap, and filled with water. The prints are then transferred from the dish to the pan, and a piece of coarse netting, such as is used for a tennis-net, strained across the top; a piece of india-rubber tube long enough to reach to the bottom of the pan should then be attached to the tap and the water turned on. The water coming in at the bottom will keep the prints in gentle motion, and will prevent them from settling at the bottom of the pan. A couple of hours of such washing will be found sufficient to remove all the hypo.

Minute blisters sometimes occur; these are more frequently found on what is called "double" albumenised paper, which has a more glossy surface than the ordinary. The latter is easier to work, and has quite enough surface for most subjects. As a preventative put a handful of common salt in the *first* washing water after toning. The washing water and the solutions should all be at the same temperature; it is for this reason that I recommended the hypo to be dissolved in tepid water, as the salt in dissolving considerably lowers the temperature of the water in which it is dissolved. Sometimes changing the print suddenly from the fixing bath to pure water will cause blisters. When this occurs the fixing bath should not be poured away, but water from the tap allowed to run on the prints while they remain in the bath, so as to allow the solution to gradually weaken.

When the prints have been sufficiently washed they should be removed from the washing water and placed on a pad of clean blotting-paper, another pad of paper being put on the top, on which more prints may be placed, so that layers of prints are alternated with layers of blotting-paper. A piece of board and some heavy books should then be placed on the top, and the whole left undisturbed for a few hours, when the prints will dry quite flat. The subsequent operations of trimming and mounting will form the subject matter of another chapter.

*(To be continued.)*



Leigh.—At the ordinary meeting on the 7th inst., Mr. James Ward, B.A., in the chair, the AMATEUR PHOTOGRAPHER Monthly Competition prints were exhibited and criticised. Mr. T. Green was nominated a member.



## The Lantern, and How to Use it.

By C. GOODWIN NORTON.

(Continued from p. 270.)

### CHAPTER X.

#### SLIDES, BINDINGS, AND CARRIERS.

BROADLY speaking, effect slides are of two kinds. One kind, requiring each slide to be an exact counterpart of the other, should be printed by contact; such as "The Old Manor House," which is shown first by day, then by night with windows lit up, and afterwards as it appears in winter. If the slides are correctly registered, the audience can see the changes going on, but cannot tell how they are done, consequently exactness is necessary.

With the other kind of effects, such as a panorama of ships passing up a river, or "A Soldier Dreaming," absolute accuracy is not usually required. The former must have each slide fixed in its frame. The latter can be used in a carrier.

There are two sizes of frames sold, one 7 in. by  $4\frac{1}{2}$  in., but those made 4 in. wide are usually large enough. The only difficulty with them is that many mechanical slides are made  $4\frac{1}{2}$  in. wide, and would have to be cut down, which cannot always be conveniently done.

Another difficulty is the mats, which are of all shapes and sizes. If the lanternist makes his own slides, the mats might with advantage be omitted, and a mask fitted in the carrier or stage of the lantern, to cut down all the pictures to one definite size, but, unless one is prepared to sacrifice a great part of some of the pictures, this cannot be done with the commercial slides. For landscapes a square mat with rounded corners is best; for portraits an oval one is generally used. Round mats seem to be going out of fashion.

The simplest manner of registering two or more photographic slides, identical in outline, is to etch a fine line all round the negative near the edge. This can be done with a ruler and the point of a knife, and would show in the slide, which before colouring should be glued in its frame, and adjusted as nearly as possible by putting one or two thicknesses of cardboard in the grooves, the final adjustments being made by planing a little off the edge of the frame. The square black line can then be adjusted to the greatest nicety, and with a little patience absolute exactness obtained. The mat and cover glass are afterwards slid in and gently wedged close to the picture with a few chips of wood and glue.

The advantage of this method is that it is much easier to get the lines which were etched on the negative coincident than it is to get photographs which have no definite lines to exactly agree; but there is the inconvenience of colouring the slides after they are in the frames, and the trouble of fixing the mats and cover glasses.

There is no doubt about the accuracy of this method of registration. The lines are covered by the masks.

The usual plan is to have the slides bound up with cover glasses and mats; to wedge them in their places as accurately as possible, and finish by planing the frames. A great deal of this work can be done without using the lantern. Those unaccustomed to the use of calipers should procure a strip of wood 6 in. long and  $\frac{1}{2}$  in. square; cut out a notch at each end, so that it will fit on the glass of the slide, and also on the frame. One end of this strip is to be level, or flush, with the top of the slide, which will be on the runner when upside down in the lantern stage.

When the slide is held to receive transmitted light, one or two of its prominent points, such as the leaf of a tree or the corner of a house, can be marked on the wood with a

pencil and then applied to the other slide, and any difference between them adjusted. Some little latitude must be allowed on account of the difficulty of measuring the distance by reason of the intervening glass. The greatest care must be taken to keep the slide upright in the frame, especially in the case of architecture. In some cases this can be regulated by applying a square to the top; if no square is available, an ordinary business card will do nearly as well, as they are always cut with right angles.

To plane down the edges of the frames, a plane and shooting board are required; and should too much be taken off, or a frame require to be increased in size, a thin piece of wood must be glued on. Old cigar boxes, which are easily procurable, answer this purpose well, but the wood is rather soft. Glue will be found to hold much better if one of the edges to be joined is well warmed; it should be just thin enough to run steadily from the brush when made as hot as possible in the glue-pot. After applying the glue, bring the surfaces together and bind the frame and thin piece round with string, which can afterwards be wetted to make the joint quite close.

*Bindings for Slides.*—The cover glass is generally fixed to the slide itself by pasting a long strip of paper, usually black, round its edges. This paper can be purchased ready cut and gummed. Amateurs generally damp the edges of the slide when applying the binding; slide makers place about a dozen of the strips, one under the other; paste the top one, put the corner of the slide on the end of the paper, and turn it over and over until all four sides are done, and then turn down the edges and corners of the paper.

When slides are frequently used with carriers this paper soon breaks and comes off the glass. To remedy this, metallic bindings have been introduced; these do not wear out, but they let dust in at the corners, and there is risk of breaking the slide when applying them. These metallic bindings are also made with mats which ensure their being placed in the centre.

Messrs. Dollond, of Ludgate Hill, make cloth bindings, which protect the slide from injury, and are practically indestructible.

There is no reason, except custom, why masks and bindings should be black; slides are much easier to sort out when they are bound with paper of different colours, and their names can be plainly written on them. The present method of naming a slide by gumming a slip of printed paper on the edge is almost useless to the operator.

*Carriers for Double Lanterns.*—Beard's self-centering carriers can be used either for quarter-plate,  $4\frac{1}{4}$  by  $3\frac{1}{4}$ , or  $3\frac{1}{4}$  by  $3\frac{1}{4}$  slides, as it automatically centres slides of any width.

There is also a single sliding carrier, which is very convenient and inexpensive, but it will take only  $3\frac{1}{4}$  by  $3\frac{1}{4}$  slides, unless specially ordered for the full quarter-plate size. Professional exhibitors use a separate frame for each slide, which greatly diminishes the danger of breakage and the risk of putting a slide the wrong way in the lantern, as the frames should have the corners cut off so that the operator can feel which is the proper way for the slide to be inserted.

A difficulty is often experienced in finding something on which to place the lantern when exhibiting. A large triple would, of course, be placed on its own case, which is sufficiently high, and a biunial is often made high enough by placing the case on the slide box. It is a good plan to make the door of the case unhinge so that it can be placed underneath the lantern to form a table on which can be placed the slides, spare limes, colouring glasses, etc.

But when no second box is available, and a suitable table not to be had, the operator must exercise his own ingenuity



to find a substitute, unless he is prepared to carry with him a tripod or four irons to fasten by staples in the lantern box and rest on the floor. An oil lantern must not be tilted, but a limelight one may be placed at almost any angle without the light being affected. To effect this there is sometimes a board hinged to the top of the lantern case, one end of which is raised by two screws passing through it and resting on the top of the case, or long wedges may be used.

Messrs. Noakes' lanterns are hinged to the base, which remains horizontal. The lantern is tilted to the proper angle, and then clamped by two screws.

(To be continued.)

## Platinum Toning on Matt-Surface Paper.

By T. O. MAWSON.

At the present time there are so many different printing papers in the market, that it is a difficulty with the amateur photographer to decide which process to adopt. The tendency at present is to obtain warmer tones on a rough or matt-surface paper. I hope to demonstrate to you this evening how very simply this is done.

We have all worked with the ordinary albumenised paper, and can, doubtless, produce a good print; and, as the working of the plain paper is in every respect similar, I think you will all agree with me that this process is better suited to the amateur's requirements than any other. Very beautiful matt-surface prints can be obtained on any of the various brands of gelatino-chloride papers; but the manipulation of these papers is a little more complicated—the prints require to be passed through an alum bath, and then squeegeed on to ground glass, or (as demonstrated by Mr. Brown at our last meeting) rubbed with powdered pumice stone till the desired surface is obtained. These operations are, of course, not required if you start with the matt-surface paper. Toning takes only a fraction of the time required to tone albumenised paper with any of the usual formulæ for gold baths. Blisters (the *bete noir* of the amateur) are unknown; there is neither albumen nor gelatine present to cause these objectionable comparisons.

The brand of paper I have always worked with is that made by Mr. Valentine Blanchard; he sends his paper out with a supply of toning solution sufficient for the paper. My own toning bath is made up from the formula given in Mr. Lyonel Clark's work on platinum toning, and I may as well mention here that the formulæ I shall have occasion to mention later on are all taken from that same excellent work. I have tried them myself, so can testify to their working satisfactorily.

I will now briefly run through the operations necessary to produce a matt-surface, platinum-toned print, and am sure, if any of you will take the trouble to sensitise your own paper, you will be amply repaid; you will find the home-sensitised paper prints much more quickly than the commercial article, and another great advantage is, you can select a paper with the necessary degree of roughness to suit the subject you are about to print. The paper I have used when sensitising has been Whatman's drawing paper—this is an excellent paper for the purpose, and can be had in several grades of surface. The rough water-colour paper is specially suited for large prints. It has only one objectionable feature, and that is, it is very porous, and before the end of the washing gets something like saturated blotting-paper; great care is therefore necessary to prevent tearing or otherwise damaging the prints.

Having selected the paper, the first operation is to size and salt it. This is done in one operation, the paper being floated on a solution of chloride of ammonia and arrowroot, as follows:—

|                     |     |     |     |     |     |         |
|---------------------|-----|-----|-----|-----|-----|---------|
| Arrowroot           | ... | ... | ... | ... | ... | 180 gr. |
| Chloride of ammonia | ... | ... | ... | ... | ... | 160 "   |
| Water (to one pint) | ... | ..  | ... | ... | ... | 20 oz.  |

Or,

|                                  |     |     |     |     |     |         |
|----------------------------------|-----|-----|-----|-----|-----|---------|
| Arrowroot                        | ... | ... | ... | ... | ... | 180 gr. |
| Chloride of ammonia              | ... | ... | ... | ... | ... | 120 "   |
| Recrystallised carbonate of soda | ... | ... | ... | ... | ... | 240 "   |
| Citric acid                      | ... | ... | ... | ... | ... | 60 "    |
| Water (to one pint)              | ... | ... | ... | ... | ... | 20 oz.  |

The arrowroot is made into a stiff paste with a little cold water; then about fifteen ounces more water added; then boiled till clear. When clear, it is removed from the fire, and, when sufficiently cooled, the chloride of ammonia, dissolved in the remainder of the water, is added. This solution should be allowed to stand all night; the clear portion is poured off into a suitable dish, and the paper floated on the surface of the liquid. I find Whatman's paper requires about three minutes floating to be properly impregnated with the solution. After removal from the salting bath, the paper should be laid, face upwards, on a level table, to allow the solution to be absorbed, then hung up to dry. I find if hung up to dry directly it is taken from the bath, that the solution runs down in streaks, and, though not noticed when the paper is dry, unevenness of silvering takes place in consequence. It is well to salt a good supply of paper when you are about it, as paper in this condition will keep any length of time. The back (or unsalted side) should have a pencil mark put on it for future guidance.

The salted paper is now ready for the silver, or sensitising bath, made up thus: Dissolve—

|             |     |     |     |     |     |                   |
|-------------|-----|-----|-----|-----|-----|-------------------|
| Citric acid | ... | ... | ... | ... | ... | 25 gr.            |
| Water       | ... | ... | ... | ... | ... | $\frac{1}{2}$ oz. |

And

|                   |     |     |     |     |     |                   |
|-------------------|-----|-----|-----|-----|-----|-------------------|
| Nitrate of silver | ... | ... | ... | ... | ... | 60 gr.            |
| Water             | ... | ... | ... | ... | ... | $\frac{1}{2}$ oz. |

These solutions are made separately and mixed. The salted paper is then floated on the solution, care being taken that no air bubbles are between the liquid and the paper. Three minutes will be found long enough for the paper mentioned; it is then removed from the bath and hung up by a wooden clip to dry. This operation must be performed by gaslight, or in the dark-room. Paper sensitised in this manner will not keep very long, it is better to sensitise just as much as you require for present use.

Printing is carried on to about the same degree as with albumenised paper, till there is a distinct bronzing in the deepest shadows; when sufficiently printed, the prints are washed in several changes of water and toned in the following solution:—

|                           |     |     |     |     |     |              |
|---------------------------|-----|-----|-----|-----|-----|--------------|
| Chloroplatinite of potash | ... | ... | ... | ... | ... | 4 gr.        |
| Nitric acid               | ... | ... | ... | ... | ... | 1 or 2 drops |
| Water                     | ... | ... | ... | ... | ... | to 2 oz.     |

On immersion in this toning bath, the print immediately begins to darken, and toning to the black stage is arrived at in about five minutes. If warmer tones are required, it is better to dilute the bath to four ounces with water. The action is then more under control, the toning action stopped as soon as the desired tint is obtained.

Fixing is conducted in the ordinary hypo bath; four ounces of hypo to one pint of water made slightly alkaline by the addition of a few drops of ammonia. I find, however, this alkaline bath has a tendency to produce a warm tone, and if a black tone is desired I use the acid fixing bath recommended for negatives, containing one ounce of bisulphite of soda and four ounces of hypo to the pint.

After fixation the prints are washed in the usual manner to free them from hypo, and dried between blotting-paper.

Having now briefly run through the necessary operations from plain paper to finished print, I think you will agree with me that this process is about as simple as any. You have nothing new to learn; simply print, tone, and fix with the usual intermediate washings, and you obtain a picture which will be "a thing of beauty and a joy for ever."

Experiments in instantaneous photography have proved that the shots not only spread out, comet-like, as they fly, but they string out one behind the other to a much greater distance than they spread. Thus, with a cylinder gun, when the first shot of a charge reaches a target that is forty yards away, the last shot is lagging along ten yards behind. Even with the chokebore gun some of the shot will lag behind eight yards in forty.



## The "Theory" of Development.\*

BY ADOLPHE M. LEVY.

AMONG the numerous operations connected with the production of a photographic picture, all offering special points of interest, there is none which possesses the same fascination as the development of a negative. No item in photographic manipulation has originated more discussion in the technical Press, or at the meetings of the photographic societies, and still we are bound to admit that little more is known about the actual transformation which the silver haloid undergoes during exposure, than what had been already suggested by the earlier observers.

Our subject for to-night bears to my mind a somewhat misleading title. How are we to discuss the theory of a phenomenon, when we know little or nothing about the nature of the latent image which forms the basis of development? A scientific theory is essentially based on well-established facts, and no speculation deserves the appellation of theory which does not satisfy this requirement. There is probably no word in the English language which is more often misused than the word theory. What has often been called "scientific imagination" is put forward as a theory. Is there any wonder that occasionally theory of this kind disagrees with practice?

In opening this discussion, I cannot pretend therefore to lay before you a theory. All I can do is to submit to your consideration the various hypotheses which have been made on the subject, none of which may represent the actual truth, however well they may appear to explain the phenomena observed during the development of the negative image. Before entering on the question of development we may profitably examine the material we have to deal with, and give a few minutes to the nature of the film which carries the latent image we are about to develop.

Negative films are composed of silver haloids suspended in an organic vehicle, which may be gelatine or collodion. In the case of the modern dry plate, bromide, sometimes with a small proportion of iodide of silver, is emulsified in gelatine. As far as I have been able to ascertain, no writer on this subject has ever hinted that, during the process of emulsification, any chemical action took place in which the organic vehicle, gelatine or collodion, was involved. In all cases the sensitive part of the film is admitted to be solely composed of silver haloids. The action of light on the sensitive salts of silver has never been determined, so as to leave no room for doubt as to the nature of the transformation which takes place during exposure. Though the existence of the sub-bromide of silver has never been proved, and, indeed, does not seem in accordance with the teachings of the atomic theory, the time-honoured hypothesis of a sub-bromide of silver being formed by the action of light on the normal bromide has been handed down from text-book to text-book.

Of late the fact that the presence of air and moisture seems to have a certain influence has led to the presumption that an oxybromide of silver might be the result of the action of light. However, this has not so far been substantiated. One thing seems to be certain, the formation of the latent image is a chemical process and is not due to mere physical action. It has been established without doubt that when light acts on one of the silver haloids, part of the contained halogen is evolved. This is amply demonstrated by a very elegant experiment due to Professor Meldola, and which was shown by him at one of his lectures at the Royal Institution.

It had been suggested by some observers that part of the haloid having lost its halogen by exposure to light, the residual product was a mixture of unaltered haloid with reduced silver. The fact that silver chloride immersed in strong nitric acid darkens when exposed to light shows the fallacy of this assumption.

Whatever the case may be, we know that chemical decomposition has taken place, and that a certain portion of the silver haloid has been transformed, yielding what we will call, in our ignorance of its nature, a "reduction product." It is this reduction product, which, submitted to the action of suitable chemical solutions, yields the nucleus of the developed image. It must be noted, however, that the quantity of silver bromide which has been transformed during exposure is very minute indeed. The silver reduced from it would be totally insufficient to account for the quantity of metal present in the fully developed negative.

Every photographer is aware that if the developer is washed off as soon as all the detail in the picture is visible, the plate on

fixing in the usual way, will show the merest ghost of an image. It is only by a prolonged action of the developer that density is obtained. This affords ample proof that density is not the result of the exposure alone. The balance of the silver forming the image must therefore be sought from some other source.

Ammoniacal pyrogallol dissolves a minute proportion of silver bromide from the film, but certainly nothing like the quantity necessary. There is no doubt that the surplus metal is derived from the unaltered bromide in the film, which, under the combined action of the developer and of the metallic silver reduced from the modified bromide, decomposes in its turn.

A classical experiment by Captain Abney shows conclusively that the accretion of density is derived from the haloid remaining in the film. An exposed gelatine plate was coated with collodion emulsion on one half of its area. It was then developed, and the portion covered with collodion emulsion proved to be denser than the other half. On stripping the collodion film, the image was found to be impressed on it also. This certainly indicates that an action has taken place during development, which has affected silver bromide, which had not been exposed to light. This phenomenon has been explained by an action which should take place between the silver reduced by the developer at the start and the unaltered silver bromide. An electro-chemical action is set up according to this hypothesis, in which the silver in a nascent state would form the cathode of an electric couple, in which the anode would be constituted by the silver bromide in the film. This hypothesis has in its favour the fact that it has been possible, by embedding minute particles of silver in a wetted gelatine bromide film, to make these the nuclei of progressive development in a plate, which had not been exposed to light. The conditions under which this experiment took place were such as to preclude the results from being ascribed to the effect of pressure, or, as it is called, "shearing stress."

Following out, however, this electro-chemical hypothesis, it is necessary that a sufficient quantity of reduction product should have been formed by light all over the picture. If the silver deposited from this reduction product is not in sufficient quantity, the potential of the metal will not be sufficiently great to overcome the resistance which silver bromide offers to decomposition.

It has often been said that however short the exposure, we ought to be able to develop the picture. Unfortunately, the means we have at our disposal are not, so far, powerful enough to cope with very much reduced exposures, and there is no doubt that it is absolutely necessary that the action of light should have lasted long enough to effect the reduction of an appreciable quantity of silver haloid even in the deepest shadows of the picture.

If the reduced silver, set free by the first action of the developer, be in too small a quantity, the image fails to build up, so as to attain the required density. In other words, in the parts of the negative which have been less brilliantly illuminated, only faint indications of detail, or even no trace of an image, are obtained. This is the case in an under-exposed negative.

The phenomena produced by over-exposure are of a very much more complex nature. In order to arrive at a satisfactory explanation of the facts observed, it will be necessary to say a few words on the function of the gelatine which holds the silver bromide in suspension. Silver bromide obtained by precipitation and exposed to light in a state of purity is not very sensitive. If, however, it is placed in contact with a substance capable of absorbing the liberated bromine, the sensitiveness to light is enormously increased. The bromine, or in general, haloid absorbents, are of various kinds, according to the process adopted in preparing the film. They are usually termed "sensitizers." In the daguerreotype plate this function was filled, to a certain extent, by the metallic surface of the plate. In the wet collodion process, the free nitrate of silver, which remains in the film, absorbs the bromine set free by the action of light. Lastly, in the gelatine dry-plate the gelatine is the sensitiser. The quantity of reduction product, formed by light in a given film, will be, within certain limits, proportional to the duration of the exposure. The gelatine will continue absorbing the liberated bromine till it becomes saturated with the halogen. At that moment the brominated gelatine seems to have the property of rehalogenising the reduction product so as to transform it back into normal bromide. This action may proceed far enough to reconvert, in the more brilliantly illumi-

\* Paper read before the Photographic Club, London.



nated parts of the picture, the greater portion of the reduction product. On development, the high lights are thin or even transparent. This is what is termed solarisation or reversal. If a plate has received a sufficient exposure in the camera, the high lights of the picture may give, on development, a positive instead of a negative image. This reversal, however, need not necessarily be complete. Part of the reduction product may have been reconverted, the remainder being still capable of development.

It is now easy to understand why an over-exposed negative should be one rendering all the detail in the subject, but which is flat, wanting in contrast, and thin as regards printing density. Meldola, in his "Chemistry of Photography," draws attention to another very important fact, which, to my mind, throws some considerable light on the appearances observed during the development of an under-exposed plate.

Gelatine which has absorbed a considerable amount of bromine set free by the silver salt in the film, becomes very much less permeable to aqueous solutions. Of course, when we speak of a considerable amount of bromine, we mean relatively to what would have been evolved during a normal exposure.

This being the case, the developing solution will not permeate the high lights as rapidly as it does the less exposed parts of the film. Development, therefore, proceeds more energetically, as regards accession of density in the shadows than in the high lights. If at the same time we consider that the partial reversal of the high lights may have taken place, leaving less reduction product, it will be easily understood why the image should be thin and wanting in contrast. In fact, under certain circumstances, a strong developer yields a positive when a weak one would have given a negative image.

We have now endeavoured to explain the action which takes place during exposure and development. We have next to consider the nature of the chemical solutions used, the influence of each constituent on the final result; and last of all to examine whether the various hypothesis made, are in accordance with the actual practice of development, as carried out by photographers.

Leaving on one side iron development, which appears to allow of much less possibilities than what has been termed alkaline development, we may define a complete developer as constituted by three factors, viz., a reducing agent, an accelerator, and a restrainer, these three chemicals being compounded in variable proportions according to circumstances of exposure, nature of subject, as also to the effect desired.

I think we may take pyrogallol as the type of the reducers generally in use, hydroquinone and eikonogen having the same mode of action, the only difference being in the relative energy of the last-named bodies. Pyrogallol in a neutral solution<sup>a</sup> has but little energy as a reducer, and still less if in an acid solution. If, on the contrary, an alkali, such as ammonia, is added to it, it becomes a powerful reducer, of which the activity increases in a certain measure with the degree of alkalinity of the solution. Alkaline pyrogallol can be prepared that will instantly decompose the silver bromide on an unexposed plate, and produce what is called chemical fog. In the developer it is the pyrogallol which both develops and gives printing density. The other elements simply modify its action.

If a soluble bromide, such as potassium or ammonium bromide, is added to the developer, the alkalinity of the solution can be increased considerably without inducing fog. This is of great value, when in cases of under-exposure a very energetic developer must be used to force out detail.

The soluble bromide appears to form with silver bromide a double salt, which, though still capable of reduction, is much less easily reduced than the normal salt. This property of soluble bromides in the developer enables the photographer, as we shall see later on, to overcome certain difficulties which, without it, might prove unsurmountable. Pyrogallol and ammonia used alone, will in many cases attack the unaltered haloid in the plate, before the development of the latent image has had time to be completed. An admixture of soluble bromide lessens this evil to a very great extent, and in fact, with some plates, cannot be dispensed with. It must be borne in mind that with an exposed plate it is very difficult to avoid a certain amount of decomposition in the unused bromide, if the developer employed be very strong.

The aim of the operator should be to reduce only that part of the haloid which has been modified by light. The developer

should not decompose directly the unused bromide of silver. This, we have already said, should be reacted on by the deposited silver, so as to form a fresh quantity of reduction product, which, being in its turn attacked by the developer, yields the increased density of deposit sought for. The alkali, or accelerator, simply increases the energy of the reducer, rendering its action more rapid, more searching, so as, in many cases, to enable one to force out insufficiently impressed detail.

We will now examine what takes place in the three well-known varieties of exposure, and endeavour to see at the same time how facts agree with the explanations suggested:—

*Normal Exposure.*—Every part of an illuminated object reflects light of an intensity proportional to that which it has received, subject to certain conditions of colour and nature of surface. In the special case of photography, we have only to deal with the actinic intensity of the reflected light, and this is unfortunately very much more influenced by the colour of objects than the visual rays. A normally exposed negative would be one in which each portion of the subject would have impressed itself proportionally to its actinic value, or in other words, a negative in which each degree of light intensity would be represented by a strictly proportional quantity of reduction product. This definition, I need not say, is never realised in practice, but approximations can be obtained to this ideal, and these constitute the simplest case of development. In dealing with a correctly timed negative, the main object should be to avoid any veiling or fog. The introduction of this defect would at once destroy the advantages of correct exposure, and would affect seriously the scale of gradation in the picture. A slight veil may make little or no difference in the high lights, while it would be very perceptible in the half tones, and still more so in the shadows. A veil is sometimes said to be an advantage in printing thin negatives. I do not think, however, that it should be introduced during development. There are plenty of means of doing this after the negative is finished. This being the case, a developer must be compounded which will do its work with relative rapidity, so as not to leave time for the unaltered haloid to be attacked by the reducer. It will contain the full amount of alkali, and a small amount of soluble bromide to keep the plate clear. Of course, the pyrogallol is varied according to the nature of the subject. What is alluded to here is always the quantitative ratio between the alkali and the reducer. Development proceeds gradually, though rapidly, each portion of the image building up proportionally to the exposure it has received. In this hypothetical case the shadows possess the required density when the high lights have become sufficiently opaque. I need not say that a correctly timed negative is the exception; photographers generally prefer to expose fully, as development allows of a certain latitude in this matter.

*Under-Exposure.*—In a negative of this kind, the high lights are fully impressed; the shadows, on the contrary, have not received sufficient exposure to form the requisite amount of reduction product. I have already pointed out, that with our present means of action, it is indispensable that a certain quantity of the reduced haloid should have been formed by exposure. If this is not the case, the metallic silver liberated by the first action of the developer will not be sufficiently abundant to start the electro-chemical action on which the building up of density is dependent. If the case of under-exposure is not hopeless, there will be, however, a small proportion of reduced bromide even in the deepest shadows, and this will develop, though very slowly, and at a rate which will not keep pace with the gain in intensity of the more brilliantly illuminated parts of the picture. If such a negative were developed in the ordinary way, the high lights would be absolutely opaque before the shadows had even started development. And on account of the short exposure, it is indispensable to use a strongly alkaline developer to bring out what detail may exist in the shadows, or, in fact, to start action in them. We are thus placed between two equally unfavourable cases—either we get a negative with high lights of printable density, and patches of clear glass for the shadows, or we obtain better rendered shadows, with the high lights entirely opaque and therefore devoid of detail. In both cases the result is useless as far as picture making goes. We have, however, a means of producing a more harmonious result, suggested by the various considerations which we have examined above. It is quite certain that the rapidity with which a negative gains in intensity, is much more dependent on the quantity of pyrogallol present in the developer than on the alkalinity of the solution



though this factor has some influence. At the same time, the amount of detail obtainable from a given exposure does not seem to be affected in any great degree by a variation in the concentration of the reducer, but is brought out the more rapidly that the solution is more alkaline. Taking these facts into account, the most suitable developer for an under-exposed plate, would contain just enough pyrogallol to start development, a large proportion of alkali, so as to set up energetic action in the shadows, and the smallest quantity of soluble bromide that will prevent the increased alkalinity of the solution from inducing fog. With such a developer the high lights would remain very thin for a considerable time, the detail in the shadows coming up under the influence of a solution strong in alkali. When the whole of the picture has thus been brought out, it will be wanting in density and quite unfit for printing if left at this stage. The minute quantity of pyrogallol employed, though sufficient to start development, has not been able to promote any great accession of density. It will be noticed, however, that the scale of gradation is much nearer to what it should be, and at all events much more satisfactory than what could have been obtained by the use of a normal developer. At the same time silver has been reduced in every part of the picture, and this deposited silver will enable us to start further decomposition in the unaltered bromide, and so obtain density of deposit. An alternative method has been suggested with a view to enhancing still more the obtention of detail without undue accession of density in the high lights. Many operators advocate soaking the plate in an alkaline solution containing the requisite soluble bromide to protect the film from fog, but no reducer. After this solution has been allowed to act for a few minutes, a small proportion of pyrogallol is added, and development starts. The action of the reducer is rendered still more gradual by this plan, while the detail in the shadows is dealt with very energetically. Whichever of these modes of procedure has been adopted, the deposit obtained so far will be very weak, and our next step is to promote the accession of density, without which the plate would be worthless. At the same time the treatment selected must be such as shall not disturb what scale of gradation we have succeeded in establishing. Here again the facts we have had under consideration furnish us with the means of attaining our object. Pyrogallol, we have said, gives density, but this action is at the same time proportional as regards rapidity, to the degree of alkalinity of the solution. A strong solution of pyrogallol made only very slightly alkaline, will act slowly on the deposit, and will cause all parts of the picture to gain density, proportionally to the amount of reduced silver they already contain. At the same time the alkalinity of the solution will be too much reduced to allow of any change being made in the contrast which exists already between the various lights of the picture. The very alkaline developer first used should therefore be washed off, and a fresh solution strong in pyrogallol and containing very little alkali should be applied, when, if the exposure has not been hopelessly short, a negative should be obtained, possessing fair gradation and printing density.

*Over-exposure.*—This case, which is by far the most frequent, is much more amenable to treatment than under-exposure. I have already gone fully into the nature of an over-exposed plate, and I think I have shown what would be the result of treating such a case with a normal developer. The considerable quantity of reduction product formed in the film by over-exposure will yield, on the first action of the developer, a large quantity of metallic silver, and this, combined with the developer, will reduce the unaltered haloid before it has had time to undergo the intermediate stage of decomposition, already alluded to several times. The picture "flashes" out and refuses to take up density. The first step to take, where over-exposure is known or suspected, is to overcome the differences of permeability in the various parts of the film, differences which appear according to Meldola, to be of considerable moment. The rapid reduction of the unaltered haloid by an increased proportion of silver from the reduction product must also be guarded against. Development should be slow and gradual. This will prevent all the silver from the reduction product from being set free at the same time. If an increased amount of soluble bromide is put in the developer, so as to mitigate the too rapid reduction of the unaltered haloid, the effects of the prolonged exposure will be rendered much less harmful. The plate should in consequence be soaked for a sufficient time in a strong and neutral solution of pyrogallol, containing an increased amount of soluble bromide. This solution will

permeate both the soft and hardened parts of the film, while the soluble bromide will form with the unaltered haloid the more stable double salt. A strong solution of pyrogallol is recommended, because, as we have already noticed, density is proportional in a certain measure to the concentration of the reducer. A very small quantity of alkali is now added to the developer. The action of the alkali is rendered still more gradual by the fact that the pores of the gelatine being filled by a plain solution of pyrogallol, this must be displaced by the now alkaline solution before action can start. If the exposure has not been sufficiently prolonged to give an undue amount of reversal, there will be a gradual gain of intensity in the lights, and these will, under very slow treatment, attain relative opacity before the shadows have made too much progress. Ample time must be given, excess of alkali guarded against, when in many cases a good negative will be secured. Hydroquinone and eikonogen have a similar mode of action to that of pyrogallol. They appear, however, to have a lesser tendency to act on the unaltered bromide of silver. This explains why many writers have dispensed with the use of soluble bromides in conjunction with these reducers. I have refrained from making more than a mere reference to iron development. This is much less under control, and does not seem to give anything like the amount of latitude in cases of incorrect exposure. In reality it is by far too energetic for delicate treatment. As will be seen, the methods of development suggested above are fairly well in accordance with the various hypothesis and explanations I have endeavoured to make clear to you.

Though the use of wet collodion is now restricted to a small number of applications, the mode of action of the developer is such, that I think it right to say a few words about it, if it were only to show the variety of ways in which the accretion of the silver forming the image can take place. The sensitised collodion plate is exposed while still wet. The solution of silver nitrate retained in the pores of the film is in this case the bromine absorbent, or sensitiser. If a wet plate be *thoroughly* washed after sensitising, and then exposed, it will prove to be reduced in sensitiveness. The presence of free nitrate of silver is therefore indispensable. After exposure the plate is developed by ferrous sulphate, to which a quantum of acetic acid has been added. Here again the free silver nitrate plays an important part, as the silver with which the image is fed is derived from it, and not from the haloid in the film, as in the gelatine process. That this is a fact can be shown by washing away the free nitrate of silver after exposure. If iron development is then attempted, no image, or at least a very faint one, will be developed. The addition of a few drops of silver nitrate to the developer will, however, start development. The acetic acid has the same function as the soluble bromide in dry-plate practice, and moderates the action of the ferrous sulphate, which, if used alone, would at once fog the plate. In comparing the gelatine-bromide with the wet collodion process, it may be said that the first action of the developer is identical in both. During exposure a certain quantity of reduction product has been formed by the action of the light on either film, and this is reduced to the metallic state at the very outset of development. It is the after process of growth of the metallic deposit which differentiates the two methods. In the gelatine process, as we have seen, the silver is supplied by the unaltered haloid in the film. In the collodion process it is obtained from the free nitrate of silver on the plate. It may be said that in the gelatine plate the image is fed from beneath, whereas in the collodion film it is fed from above. I often hear it said that silver is precipitated on the image during development. This expression is entirely wrong, and gives no idea of the action which takes place. The mode in which the silver appears to be fixed is similar to that observed in the electroplating of metals. The metal is not precipitated in galvanoplastic operations, it is fixed by the cathode by a kind of molecular deposition. There is a very great difference between the two modes of action.

The remarks I have made would probably not be deemed complete if I did not allude to printing processes by development. The gelatine bromide paper for positives calls for no special remark. The action of the developer is similar to that described for negative work. In the platinotype hot bath process, the prints have to undergo development, but the process is of a quite different nature to those we have examined so far. The object of the developing solution is mainly to bring the ferrous oxalate, formed during exposure, into solution. It can then act on the



potassium chloroplatinite. The variations in the temperature of the bath simply modify the energy of the reaction between the two salts. In contrast to what takes place in the development of a negative, this is really a case of precipitation of metallic platinum from the chloroplatinite of potassium.

In closing these remarks, it may be asked what benefit we should derive if the true nature of the transformation which silver haloids undergo during exposure to light were known. It is not probable that we should learn thereby to use our actual developers with more effect. Long practice and experience have taught photographers how to meet most cases in the development of their negatives. What we must hope for in the disclosure of a reliable theory of photochemical action, is the means of discovering and applying new agents to the work of development, agents which shall be free from the discrepancies which we have found in our old and so far trusted developers. We may then be able to discuss the "theory" of development; what we are doing to-night is simply to compare one with another the various aspects of the question. We cannot have the pretension of being in possession of anything more than a few experimental facts, and some more or less plausible speculations as to their nature.

#### THE POSITION OF

### Stereoscopic Photography

IN REGARD TO BEAUTY AND UTILITY.

By J. CRAIG ANNAN.

WHEN asked to write a paper for this meeting, it struck me that I could not do better than introduce a discussion on a subject which occurred to me during the exhibition lately held in our city, and which has often been in my mind since, viz., to enquire into the reason for the great revival of stereoscopic work among the photographic fraternity.

There are several classes of men who photograph, and setting aside those who employ photography as an agent in scientific research, I think they may be divided into three classes.

There are those—chiefly professional—who photograph for monetary gain, and they do stereoscopic work because an eager public desire to buy stereoscopic photographs to entertain their friends in the drawing-room. This is business, and it were treason to criticise the great mammon god of the Briton.

Then there are those, mostly amateurs, who photograph because they desire relief from the monotony or worry of their daily avocations, or because they have much leisure and require some hobby to occupy their time and thoughts, and they find in the manipulation of cameras, plates, papers, and solutions, a satisfactory outlet for their energies. These hail stereoscopic work as a delightful variety, and naturally become enthusiastic over it. They re-photograph all their old views, and as they show the results to admiring friends, they expatiate on the marvellous reality of the appearance.

How everything stands out, and how, were the objects but coloured, the observer might imagine himself to be looking at the actual scene through a binocular! The admiring friend acquiesces, and remarks, "What a wonderful thing science is! Do you think photographs ever will be taken in colours?" This class photograph for the pleasure they derive from the manipulation; it is a harmless and interesting amusement, and they might readily be much worse employed.

Then there is a third class of camera men who photograph because of the results. Some like to have a picture record of the places they have visited to remind them of a happy holiday, and to illustrate their public or private lecture to less fortunate brethren who stayed at home. And there are some who use the camera because through it they can acquire lasting impressions of much that is beautiful. Their albums contain notes of nature in all her moods. A wave, a cloud, the outline of a hill or tree-branch fixed by the camera is ever a pleasure to them to look at. They may or may not enjoy the manipulation, but the real end of their work is the album, not the dark-room. Their object I consider the noblest, and it is from their stand-point that I wish to examine stereoscopic photographs. In the first place I submit that it is impossible to appreciate the artistic qualities of a photograph—be it ever so fine—through any mechanical contrivance.

Imagine an artist painting a picture of a view which he looked at through a telescope! To enjoy a work of art the mind must

be untrammelled by anything outside of it. To me this is the initial objection to the stereoscope. The disturbance created by the necessary fixing of the parts, getting a proper light, adjusting the focus, etc., etc., is a source of irritation which effectually prevents the calm enjoyment of the beauty of the picture. In the second place I submit that after going through the trouble of fixing the instrument the result is not beautiful. It may be interesting to see once, but it is not beautiful, and this for various reasons. I shall probably be told that the parts stand out and take their proper position in the plan of the landscape, that it looks natural and real, and that it must therefore be more beautiful than a flat surface could possibly be. With this I entirely disagree. That the parts stand out I admit; that they appear real, to have solidity, I deny.

Of course, I can only speak of the results as they appear to me, and as I can see no reason why they should appear different to others, I take it for granted that what we severally see in looking into the instrument is approximately the same impression. Instead of having the appearance of natural objects with bulk or solidity, stereoscopic pictures always remind me of stage scenery painted on flat surfaces and set behind each other at short intervals. The reason for this impression is obvious. In nature it is impossible to see objects near at hand, and objects at a distance in focus at the same time. In the stereoscope, however, the several planes are all seen in focus at once, and thus the effect aimed at by one means is directly annulled by another, with the result, as I have stated, that the various planes seem flat portions separated only by a little space from each other.

At a casual glance one is apt to think that it is necessary to alter the focus of the eye to see different objects in the stereoscopic picture, but more careful observation will show that this is not the case. The mind can only concentrate itself on one object at a time, but if an endeavour is made to look at a near and distant object together it will be found quite possible to do so. From a scientific point of view it is obvious that as the photographs are flat surfaces, the focus of the eye must be the same for all parts of the picture.

In judging an ordinary photograph one of the chief points to be considered is, to what extent the feeling of atmosphere has been introduced into it.

Painters devote their most earnest endeavour to convey the atmospheric impression in their pictures, for well they know that it is on the much maligned atmosphere of our island that so much of its beauty depends. Now the stereoscopic picture is absolutely devoid of all atmosphere, and must, therefore, be false and untrue to nature.

I have tried an experiment over and over again; as there is a stereoscope here, I would like you to try it also, and see whether you agree with me in the result. Look at a photograph in the instrument carefully, note all the glaring hardness and the persistent manner in which every object seems to be calling out, "Look at me, I am standing out, I have no connection with anything behind. You may have thought that I was on a flat surface, but look! you were mistaken. I have really no connection with anything behind." Then when you have noted all this, shut one eye, keep it closed, and you will find that it is really a very beautiful photograph at which you have been looking. The tree in the foreground has a lovely form and the mass of stems behind blend into a delicious softness as they disappear behind each other in the distance.

The stereoscopic effect is an endeavour to imitate nature, while the object of an ordinary photograph, or drawing is only to reproduce an impression of nature. The failure of the stereoscope in its greater aim is more marked than the less ambitious but more practical endeavour to reproduce on a flat surface an impression of what we see.

I contend therefore that stereoscopic photography considered from the æsthetic standpoint is a failure—that the stereoscope is only a scientific toy, and a false one at that, calculated to interest, without either pleasing or satisfying. The truth of the axiom "The boy is father of the man" is as clearly demonstrated in photographic matters as in any other department of life. When tops are "in," no schoolboy who has the slightest regard for propriety would dare to be seen by his companions with marbles in his possession, and six weeks later when "tip-cat" is in vogue, tops have no interest for him whatever. In photographic circles at present stereoscopic work is "in" and I do not expect anything I have said will in the least affect the business of the maker of stereoscopic cameras and stereoscopes.



## Toning Slides with Uranium Salts.

(Read before the Society of Amateur Photographers of New York.)

EXPERIMENTS in toning slides with uranium salts have led me to adopt the following simple working methods:—

Give full exposure, and develop until the slide looks somewhat flatter than it is to appear when finished; in other words, the highest lights must have a silver deposit in them, and not be clear glass. After having fixed the slide in hypo in the usual way, wash it thoroughly under a tap for a few minutes, the elimination of the hypo being of importance to insure success in the toning operations, which are as follows:—

Make up the following three stock solutions, which can be made up in a few minutes, and keep indefinitely:—

### No. 1.

|                 |     |     |     |     |            |
|-----------------|-----|-----|-----|-----|------------|
| Uranium nitrate | ... | ... | ... | ... | 1 part.    |
| Water           | ... | ... | ... | ... | 100 parts. |

Filter in case the solution is not clear; this is generally unnecessary.

### No. 2.

|                        |     |     |     |     |            |
|------------------------|-----|-----|-----|-----|------------|
| Ferricyanide potassium | ... | ... | ... | ... | 1 part.    |
| Water                  | ... | ... | ... | ... | 100 parts. |

### No. 3.

|                 |     |     |     |     |           |
|-----------------|-----|-----|-----|-----|-----------|
| Ferric chloride | ... | ... | ... | ... | 1 part.   |
| Water           | ... | ... | ... | ... | 10 parts. |

Now you have everything necessary for toning, and proceed as follows:—

**A. Chocolate-brown Tones.**—Take ten parts of No. 1 and one part of No. 2, and permit the slide to remain in this solution until the desired tone has been reached. In order to control the procedure of the operation, examine the slide in transmitted light every ten or fifteen seconds. The whole operation rarely lasts a minute. After the desired colour has been produced in the slide, wash the same for a few minutes, and then place it upon the rack to dry.

**B. Brown Tones.**—Take five parts of No. 1 and one part of No. 2, and proceed as in *a*.

**C. Reddish-Brown Tones.**—Take equal parts of No. 1 and 2, and proceed as in *a*.

**D. Red Tones.**—Take one part of No. 1 and two parts of No. 2, and proceed as in *a*.

In order to keep the high lights clear in this operation, a few drops of glacial acetic acid solution added to the toning solution may be used to advantage. I myself never use any, though, not deeming it necessary if the toning operation is carefully performed.

**E. Greenish-Blue Tones.**—Take equal parts of Nos. 1 and 2, and tone the slide until it is of a very dark colour, and very dense. Rinse for three or four minutes, and then plunge into a solution of one part of No. 3 and five parts of water, in which solution the slide is allowed to remain for at least five minutes. It is then washed and dried, drying out in a greenish-blue.

**F. Blue Tones.**—Instead of plunging into a solution of one part of No. 3 and five parts of water as in *E*, take the stock solution as it is, and allow the slide to remain in that for five minutes, as in the above, after which wash and dry. Continued washing will not harm the slide, but a simple rinse will suffice.

The tone attained in this manner is an excellent one for seascapes, and moonlight effects especially.

In case the resulting slide after toning is not satisfactory, it is easily brought into its original state by dipping it into a dilute solution of potassium cyanide for a few seconds, upon which the slide regains its original tint. Do not allow the slide to remain in the cyanide solution longer than absolutely necessary to remove the toning stain, inasmuch as the solution is a powerful reducer, and would in short time eat away the whole picture. After having washed the slide after this operation it may be retoned again with any one of the above-named formulae.

In case similar results are wished to be attained with other salts than uranium nitrate and ferricyanide of potassium, slides can easily be toned brown or red by treating them in the following simple way:—After having washed the fixed slide thoroughly, dip it into a concentrated solution of bichloride of mercury until well bleached, after which operation wash for at least ten minutes in running water, and then colour with a concentrated solution of sulphite of soda for brownish tones, or with a concentrated solution of carbonate of potash for reddish ones. The results are generally fine. This method led me to the following observation. It often happens that the films of slides upon developing with hydroquinone are stained a deep yellow, even orange, and that such slides are only good for covering glasses, after the film had been carefully removed from same in either hot water or acid. This is no longer the case. Should the stained slide be good in all other respects, do not throw it away as heretofore, but give it a short bath of bichloride of mercury, which bleaches the colour at the same time that the silver image is bleached. Upon treatment with either ammonia, sulphite

of soda, or carbonate of potash, the stain will have entirely disappeared, and the resulting slide will often turn out to be a gem of the collection.

### NOW A FEW WORDS AS TO TONES IN GENERAL.

Except for exceptional cases, I think it advisable not to tone slides, but to try and get the fine brown colour directly in development, a colour so easily obtained by the well-known formula:—

|                     |     |     |     |     |           |
|---------------------|-----|-----|-----|-----|-----------|
| Hydroquinone        | ... | ... | ... | ... | 1 part.   |
| Sulphite of soda    | ... | ... | ... | ... | 4 parts.  |
| Carbonate of potash | ... | ... | ... | ... | 3 parts.  |
| Water               | ... | ... | ... | ... | 85 parts. |

Use one part of this solution with four parts of water, after having exposed four times as long as would have been necessary to obtain a black tone with the normal developer, that is, one part of the stock solution and one part of water.

For certain effects, though, toning is very advisable, the choice of colour depending entirely upon the good taste and judgment of the slide maker.

These few remarks, I hope, will lead some of my colleagues to further experiment in this particular fascinating branch of photography, and I sincerely hope that they will soon improve upon my own crude experiments.

ALFRED STIEGLITZ.



## Collodio-Bromide Lantern Slides.\*

BY F. GOLDBY.

In approaching this subject I do so with a certain amount of diffidence, as my acquaintance therewith is by no means a long one, but if I can induce any member here to give it a trial, my purposes will have been amply served. Then let us begin at the beginning. In the first place, the absolute cleanliness of the plate is of paramount necessity, as the smallest speck of dust on a plate will produce a spot in the finished slide. The plates being clean, the next thing is to coat the edges with a solution of indiarubber, this being intended to restrain the flow of the emulsion. For this purpose I have found the ordinary mounting solution made by Messrs. Mawson and Swan to work very satisfactorily. The emulsion I obtained from Mr. W. Brooks, of Reigate, and I believe its manufacture is at present a trade secret. The emulsion is poured on in the usual way, the plates being rocked to insure even coating. They will dry spontaneously in about half an hour, but when one wishes to dry them quickly, as in the present case, I advise them to be placed upon a sheet of plate glass under which is a dish of boiling water; a double thickness of blotting paper should be laid upon the glass to secure an even surface. By this means the plates can be dried in about five minutes. With a negative of average density, I find the exposure required is the burning of about six inches of magnesium at a distance of seven or eight inches from the printing frame. The plates are quite as suitable for reducing in the camera as for printing by contact, but in this case exposures should be made during the spring and summer, as the best results are obtainable in a strong light. The plates are developed with an ordinary "pyro" and carbonate of ammonia developer. Should the image be rather weak, it can be intensified with a pyro and silver intensifier, which I have found produce a most brilliant result. Of course, the plates must be thoroughly washed before applying the latter, in order to eliminate every trace of "hypo." Finally, the plate should be dried by artificial heat, and varnished with a solution of amber in chloroform, which I believe to be by far the best for this purpose.

In conclusion, the advantages I would claim for the collodio-bromide process are (1) the ease and quickness of the manipulations, it being quite possible and practicable to take a plain glass, clean edge, coat, expose, develop, fix, wash, and dry, ready for varnishing and mounting, within the space of ten minutes; (2) the great latitude in exposure, black tones being obtainable with a short exposure and strong developer, and a wide range of fine warm tones by long exposures and weak development, followed by intensification after fixing. (3) The transparent character of the image, it being possible to obtain perfectly clean glass in the high lights, and transparency in the shadows with greater ease than with gelatine; and, lastly, the sharpness and brilliancy of the finished slide and beauty of the tone.

\* Communicated in a paper to the Brixton and Clapham Camera Club.



## Exhibitions.

### FAVERSHAM INSTITUTE PHOTOGRAPHIC SOCIETY'S EXHIBITION.

THE annual exhibition at the Minor Hall of this flourishing limb of the Institute attracted a large number of visitors. There were 296 prints and lantern slides sent in for competition, there being twelve competing members and six non-members. Mr. T. Barns, the adjudicator, gave his awards as follows:—Special prize presented by the President, Lord Throwley, for the best print in the competition, Mr. C. Cremer. Special, presented by W. C. Stunt, Esq. (Vice-President), for the best lantern slide in the competition, Mr. C. Cremer. Special, presented by Captain Hooper, for the best work, irrespective of class, done by a member who has commenced the practice of photography since the last exhibition, Mr. A. B. Chambers; very highly commended, Mr. F. C. Jackman; h. c., Mr. C. H. Semark. A prize to value of £1 offered by the Society, to be competed for by non-members, Mr. S. J. Chambers; v. h. c., Mr. S. N. Smith; h. c., Miss Gillett and Mr. H. Fuller; c., Mr. W. H. Verity. MEMBERS' CLASSES: *Landscape*—1st, Mr. C. Cremer, 2nd, Dr. Evers; v. h. c., Mr. A. Coe; h. c., Mr. W. C. Stunt; c., Mr. F. Crosoer. *Instantaneous*—1st, Dr. Evers. *Architectural*—Equal 1st, Dr. Evers and Mr. M. Laxon; h. c., Mr. A. Coe. *Figure Studies*—1, Mr. C. Cremer; 2, Mr. W. C. Stunt; v. h. c., Captain Hooper. *Enlargements*—1, Mr. C. Cremer; 2, Dr. Evers. *Lantern Slides*—1, Mr. C. Cremer; 2, Dr. Evers; v. h. c., Mr. F. C. Jackman, Mr. Crosoer, and Rev. B. S. Malden; h. c., Mr. W. C. Stunt. As will be seen by the foregoing list, Mr. C. Cremer (whose name was certainly not absent last year) has now got to the front in almost every class in which he competed. Further, he takes the President's special prize for the best print in the exhibition (a picture of a cottage and stream at Chilham), and also takes Mr. Stunt's special for the best lantern slide—a little gem showing an interior view of Tintern Abbey. That Mr. Cremer's visit to the lovely banks of the Wye has not been in vain his pictures are ample proof. Last year there were no enlargements in the competition. This year there were two competitors, Mr. Cremer taking first. A new departure this year was the class open to non-members. There were six competitors, five of whom secured the judge's notice. The sixth lot, we believe, were the production of an amateur who had manufactured his own camera and lens. Capt. Hooper's special for the best work exhibited by members who have commenced dabbling in the photographic pastime since the last show, secured three competitors, each receiving a notice. In fact, the Judge was certainly liberal with "v. h. c." and "h. c." cards, from which we augur that he had a good opinion of the work sent in. The work of the members was augmented by some loan collections, amongst which were about 230 pictures sent to the AMATEUR PHOTOGRAPHER in their prize competitions, three frames of the Cabinet Portrait Gallery, lent by Mr. Vizetelly, to 24×18 enlargements of views of the Matterhorn, on Eastman's bromide paper, and a half dozen landscapes, on the same kind of paper, and two fine portraits on Ilford bromide paper, lent by Mr. Laxon. Mr. R. Dawes sent some specimens of wet plate work, done thirty years ago; Dr. Evers lent some bromide enlargements and seventy-two lantern slides; Mr. Crosoer sixty-two slides (coloured), Rev. B. S. Malden six half-plate views, Mr. Jackman five quarter-plate, Mr. Fielding some views of Paris, and Dr. Gange some large direct prints. Mr. Austin also lent some frames of pictures photographed by Mr. Vizetelly. A group of the Faversham Artillery officers, enlarged on bromide paper; a portrait enlarged in bromide on opal, two portraits enlarged on bromide paper, and a frame containing ten portraits of children were included in this collection. Mr. G. W. Boorman lent a portrait on glass of Dr. Hoare. Altogether the show was an exceedingly attractive one, and it is little wonder that visitors were numerous. Amongst those who attended were Lord Throwley, the President, the Vice-Presidents (Cap. Hooper, Dr. Evers, Mr. Stunt), and many others.

## Societies' Meetings.

**Cornish Camera.**—Meeting on the 12th. The Autotype Company very kindly sent some exposed carbon tissue of different colours, which were developed by the Hon. Secretary, Mr. H. Tonkin, some capital prints being turned out. A vote of thanks was accorded the Autotype Company.

**Durham.**—The monthly meeting was held on the 13th inst. There was a large attendance, the President, Rev. H. E. Fox, M.A., in the chair. Vice-President, Councillor E. White, read a paper on "Watkins' Exposure Meter," exhibiting one and explaining the method. An exhibition of members' out-door apparatus was also held, there being quite a turn out of all kinds of cameras. Mr. Morgan explained the working of a camera and use of swing-back. Hon. Secretary distributed samples of the Eastman Company's bromide paper. Seven new members were proposed, three of these being ladies.

**East London.**—Ordinary meeting 12th inst., Mr. F. Uffindell, Vice-President, in the chair. The following gentlemen were elected members:—Messrs. Charles Smith, W. Zeal, A. Berry, and Mead. A practical demonstration, illustrated throughout, on the "Wet Collodion Process," was given by Mr. C. Tylee. Two plates were exposed to magnesium ribbon and one lamp, the result being very satisfactory. The interest shown by the members indicated that Mr. Tylee's demonstration was highly appreciated. Books on the process, kindly sent by Messrs. Mawson and Swan, also sample packets of Eastman's new extra rapid bromide paper, were distributed amongst the members.

**Fairfield.**—The fourth meeting was held on the 12th inst., the President, J. L. Mackrell, in the chair. Mr. Fred. Anyon gave his most interesting and instructive lecture on "The Artistic Side of Photography," dealing with the general rules of art and their application to photography, illustrating the subject fully by the use of the lantern. His slides, especially his fine flower studies, called forth great admiration, both on account of their artistic and technical excellence. During the evening nine new members were elected, and slides by Messrs. J. L. Mackrell and J. Smith shown.

**Hackney.**—The ordinary meeting was held on 14th inst., Mr. Beckett in the chair. Work was shown by Messrs. Gosling and Dean. Mr. Hudson showed a very neat box for sending negatives through the post, and the Hon. Secretary handed round spot masks as made the Fry Manufacturing Company, and samples of focussing cloth as made by the Rubber Company (Liverpool). The Chairman called on Mr. Howson for his demonstration on "Isochromatic Plates." Mr. Howson advised the "yellow screen in landscape work," which would necessitate exposure of two and a half or three times more than the plates would otherwise have, but the results were better. Some people had stated that ordinary plates worked with a screen would give the same results, but Mr. Howson demonstrated the fallacy of this by actually making the exposure with the screen, and with no perceptible advantage. Mr. Reynolds asked whether Isochromatic plates would keep? Mr. Howson said they would keep as well as ordinary, but might lose a little speed; and in answer to Mr. Capel said they reduced retouching to a minimum, and to a great extent prevented halation, as the coating of the plate was of a matt-surface, and more of a non-actinic than the ordinary plates. Mr. Gosling asked whether they would do for hand-camera work, and was informed that in many cases they were better, but not so rapid as the red-label plates, the speed being between the white and the red.

**Hexham.**—Monthly meeting held on 5th inst., Mr. Jasper Gibson presiding. It was resolved to hold the first outdoor meeting of the Society at Bardon Mill, on 15th inst. The Council announced that some prize slides had been booked for April 28th. After the transaction of business, Mr. Jas. Brown, member of the Newcastle Photographic Association, read his interesting and exhaustive paper on "Gelatin-chloride Printing Paper, and its successful manipulation," which was followed by practical demonstrations of the working of different toning baths. Mr. Brown is eminently successful in obtaining beautiful warm tones with this paper, and the prints he exhibited were admired by everyone. One of the "Monthly Competition" sets of the AMATEUR PHOTOGRAPHER prints was exhibited, which contained a number of exceptionally fine prints. Afterwards a discussion on hand cameras took place, and Mr. T. P. Edwards exhibited an "Itakit," and showed some excellent results he had obtained with it. Mr. J. Pattison Gibson exhibited a new-pattern "Ideal" hand camera, and after demonstrating its working, remarked that, undoubtedly, few hand-cameras possessed such a combination of good qualities.

**Holborn.**—At last meeting, on the 1st inst., Mr. E. Clifton took the chair, and distributed the prizes won at the annual exhibition in March. Mr. Golding took a silver medal for the best picture in the exhibition, and Mr. West was awarded a bronze medal for the next best picture. Amongst the other prizes awarded was an en-

**West London.**—Ordinary meeting, 8th inst. President in the chair. Lantern evening. Slides exhibited by Messrs Stein, Lamley, Grindle, L. Selby, Scantlebury, Hodges, Dixon, Bilton, H. Selby, Rogers, and others. The President reminded the members of the annual dinner to be held 13th May.



larging apparatus, a flash lamp, a plate washer, two clocks, two Thornton-Pickard shutters, a volume of the *Graphic*, a silver match box, a gold pin, etc. After these prizes had been distributed to the different winners, a gold pin was presented by the Club to Mr. Bell for the work which he had done for the Club in the office of Treasurer for the past two years. A silver match-box was also presented to Mr. Benest, the lanternist for the past two years. Some excellent songs were afterwards given by various members and friends. On Saturday, the first official outing of the year was attended with splendid weather. Hampstead Heath was the rendezvous, and some excellent work was done. Sixteen members sat down to tea at the "Bull and Bush."

**Hove.**—The first ordinary meeting was held on the 12th inst. The principal business of the evening was a lantern exhibition conducted by Mr. A. H. Webbing. The public, to the number of about 200, were admitted free. G. B. Woodruff, Esq. (Chairman of the Hove Commissioners and President of the Club), gave a short inaugural address, in which he dwelt very strongly upon the necessity of amateurs giving their particular attention to the production of work which would have some claim, in an artistic sense, to be called pictures, and not mere transcripts of nature, as so many photographs were. The slides were exhibited by Mr. G. H. Levett with his fine triple lantern. The first slides shown were a series of about fifty, illustrating English cathedrals, concerning which Mr. Webbing gave short descriptive notes. Afterwards about 120 slides, by local amateurs, chiefly members of the club, were shown. The contributors were Dr. Dawson, Messrs. Bedford, Corder, Emery, Ford, Job, Morris, Williamson, and Webbing. The slides were for the most part of first-rate quality, and were apparently much appreciated. Mr. Webbing had skilfully arranged them so that the interest of the audience was well sustained. The secretary announced that monthly excursions would be held during the summer on Saturday afternoons, also that the following papers had been promised:—"Chemistry of Photography," by Mr. W. Jago; "Stereoscopic Photography," Mr. A. H. Webbing; "Exposure," Mr. W. A. Watts, M.A.; "Hand-camera Work," Mr. C. Job; and it was hoped that a lecture on Art Photography would also be arranged.

**Ireland.**—Ordinary meeting held on 8th inst., Geo. Mansfield, Esq., J.P., Vice-President, in the chair. A very interesting account of a tour in Switzerland was given by Sir Howard Grubb, F.R.S., Vice-President of the Society, illustrated by views, taken with a Luza hand-camera. Sir Howard produced some very pretty moonlight effects by means of green glass and under-exposed plates. At the conclusion of his lecture he referred to the use of stereoscopic cameras, and said he hoped some maker would introduce a good stereo hand-camera, as, in spite of all that has been said against them, stereoscopic pictures would come to the front again. He said that the unpopularity of the stereoscope was mainly due to the fact that sufficient care was not taken in mounting the pictures; one being mounted the slightest bit higher than the other caused fatigue of the eyes, which were not adapted for looking one above the other. The following members exhibited slides, the lantern being under the control of Prof. J. A. Scott, Vice-President, and Mr. Jas. Carson, viz., Messrs. V. Smyth, A. Bradley, J. Simpson, Col. Kelsall, R. M. Inglis, and F. H. Orr. Messrs. Hurter and Driffield's Actinograph was exhibited by Mr. Hargrave, Hon. Sec.

**Jersey.**—The second annual meeting of the society was held on the 6th inst. The report of the exhibition and year's work, together with the Treasurer's accounts, were presented and passed, and much important business was transacted. The following new officers were elected:—President, Captain Lamb (re-elected); Vice-President, Colonel Jackson; Secretary and Treasurer, Mr. G. Le M. Gruchy; Committee, Mrs. Smith, Messrs. Toms, Rogers, and Andrews. The exhibition report was very satisfactory. A great advance was shown in the quality and quantity of pictures. The exhibition was thrown open to all the Channel Isles, and two Guernsey pictures gained certificates. The Enlargement Class was very big and excellent, and was especially admired by the judges. The following were the awards:—Gold medal for excursions, Colonel Jackson; silver medal for excursions, Captain Lamb; bronze medal for excursions, Mr. Hammond Spencer. Gold medal for best picture in exhibition, Captain Lamb, "Seeking Shelter," ship entering Yarmouth Harbour in a storm. Class I., Landscapes: Silver medal, Mr. Franche, "Clovelly;" bronze medal, Colonel Jackson, "Gorey Castle;" certificate, Mr. Nichols (Guernsey), "Fackenhams." Class II., Instantaneous: Silver medal, Mr. Andrews, studies of "Sea and Sky;" bronze medal, Captain Lamb, "Becalmed;" certificate, Captain Lamb, "Grand Canal." Class III., Genre, Group, etc.: Silver medal, Mrs. Haddon Smith, "A Burning Village;" bronze medal, Mr. Franche, "A Spring Show;" certificate, Jurat Messervy, "s.s. *Antelope*;" certificate, Miss Paint (Guernsey), "Market Woman." Class IV., Enlargements: Silver medal, Mr. Rogers, "Babbacombe Bay;" bronze medal, Captain Lamb, "Harvest;" certificate, Mr. Rogers, "Waves." Class V., Slides: Silver medal, Colonel Jackson, "Umsitzur Golden Temple" bronze medal, Jurat Messervy, "A Conser-

vatory;" certificate, Jurat Messervy, "Brabant House." The judges were Messrs. Fuller, Oules, and Colonel Temple.

**Kensington and Bayswater.**—A meeting was held on the 11th inst. Mr. Sydney C. Mote presided, and there were nineteen other gentlemen present. One question was read from the question box, namely, What is the best method of ascertaining when development of a negative is complete? Mr. J. D. England gave a paper and demonstration on "Celluloid Films," illustrating his remarks by handing round sheets of the different kinds of celluloid, and by developing some films before the audience. He gave a history of the use of celluloid, stating that it is prepared by the treatment of paper pulp with nitric acid, and after being well washed is combined with camphor, cut into sheets of varying thickness, and hung up to dry for a time, sometimes extending to three months. They are afterwards rolled to give them the required surface. The advantages of celluloid films are their lightness and portability as compared with glass, and their comparative freedom from halation. The difficulty of keeping them flat during exposure may be overcome by the use of film carriers, which are pieces of cardboard having a thin strip of metal at two or three of their edges. In developing it is best not to wet the film previous to insertion in the developing solution, but to have a very small quantity of water at the bottom of the developing dish, which will cause the film to lie flat, and the developer may then be poured upon it. The varnishes which may be used for preserving the negative on a celluloid film are (1) amber dissolved in chloroform, (2) gold size thinned with benzol, and (3) a water varnish made by dissolving shellac in an aqueous solution of borax. The first two should be applied by means of a soft brush, and the film should be dipped into the last (while wet from the washing) and hung up to dry in the usual way. Mr. England also showed some lantern-slide carriers for celluloid films, invented by Mr. Scanlan. He stated that by using these carriers the films were protected from the great heat during the time the slides were being shown upon the screen. An out-door meeting was arranged to be held on Good Friday, starting from Uxbridge Road Station at 11 o'clock for exposures on Hampstead Heath. Mr. J. E. Hodd was elected to take the chair at the next meeting. An outdoor meeting was held on Good Friday. Eight members and friends were present. An enjoyable day was spent in visiting Richmond, Twickenham, Hampton, and Bushey Park, and some excellent photographs were taken. The company dined at the Ship Hotel, Twickenham, where excellent provision was made for them. Mr. Fred Lacey, the well-known vocalist, presided.

**Leytonstone.**—Meeting, April 13th, Mr. A. P. Wire in the chair. Mr. A. J. Newton read a paper on "Bromide Printing," showing results of a number of experiments he had carried out in the process. After giving details of procedure, he exposed and developed a print in the club's dark-room, which was voted first-class. Specimens of work upon Eastman paper, Fry Manufacturing Co.'s papers, bromide opals and cards were laid upon the table for inspection. Members are requested to note that 27th inst. is the last lantern evening of the season, and that the American slides are booked for us for that date. They are invited to bring either lady or gentlemen friends on this occasion. Meeting, 6th inst. Mr. H. Summers ably dealt with silver printing, exhibiting a number of excellent examples to illustrate his remarks. He afterwards toned a batch of prints in the borax bath, the use of which he advocated. An animated discussion ensued, the majority of the members being of opinion that silver prints could still hold their own, both for ease of production and beauty of result.

**Liverpool Camera Club.**—The usual meeting was held on the 13th inst. in the new club-rooms, 128A, Mount Pleasant. In the absence of the President, Mr. Jas. Hawkins, Vice-President, welcomed the members to the new rooms, and announced that the meetings will now be held on the second and fourth Wednesdays in the month. Three new members were proposed and elected. In connection with the "Half-hours with Elementary Photography," Mr. W. A. Stuart gave an interesting and practical paper on "Bellows Making," followed by Mr. W. A. Brown on "The Development, Reduction, and Intensification of a Negative." Both papers were greatly appreciated by the members, and a hearty vote of thanks was accorded to Messrs. Stuart and Brown. The "Question Box" was opened, and replies furnished by various members. The club excursion to Burton and Neston was well attended, and it is hoped to make these outings a great success.

**Paisley.**—On 5th inst. the annual meeting of this Society took place. There was a good attendance of members. In the absence, through illness, of the President, the Rev. Mr. Crouch occupied the chair. The prizes awarded at the recent Exhibition were handed to the successful competitors by the Chairman. A vote of thanks was unanimously accorded the gentlemen who had provided the prizes. The Secretary's report showed that 21 members had joined during the year, and that the various meetings and excursions of the Society



had been well attended. The rooms, which were opened in October were now free of debt, a special subscription for this purpose having been made by the members. A short course of elementary lessons in photography, conducted by Mr. James Mure, during the month of November, had proved very beneficial to the younger members, and had increased the interest in the work, and added to the roll of the Society. The Treasurer's report was also submitted. It showed the Society to be in a very satisfactory condition. The following members were elected office-bearers for the ensuing year:—Hon. Presidents, H. H. Smiley and Stewart Clark; Hon. Vice-Presidents, Robert Harris, James Donald, jun., James Barr, and Matthew Morrison; President, A. F. McCallum; Treasurer, R. N. W. Thomson; Secretary, David B. Jack, Glencairn, Blackhall; Council, Robert Ferrier, Alex. Kilpatrick, Thomas H. Taylor, Edward Cook, and Morris M. Wright; Lantern Section, Thomas Rastall, T. H. Taylor, and R. M. Easton.

**Richmond Camera Club.**—At the meeting on 8th inst. Mr. Cembrano presided. A representative of Messrs. James Braine and Sons showed and explained their "Book" camera and the "Modern" camera. Mr. Davis read a paper on "Pictorial Composition," touching upon some of the principal rules applicable to landscape work. A discussion followed, in which Messrs. Ardaseer, Ennis, Cembrano, and others took part.

**Rochdale.**—On April 12th a great number of members and friends assembled at the rooms, the attraction being the River and Seascapes Set of the AMATEUR PHOTOGRAPHER competition prints; most of the prints were greatly admired, and others were—well, we will say nothing—but taken on the whole they showed excellent work and artistic skill. On Saturday last twelve members with their cameras visited Daisy Nook, near Failsworth, it being the first ramble of the season. The chief items of interest in this pretty spot are old buildings made famous by Ben Brierley, a gentleman well known in Lancashire for his excellent writings in the Lancashire dialect. Several of the old houses are known by peculiar names; for instance, "Hen Cote," "Red Bills," "Ould Bell," and "Medlock Hall," dated 1400, which date we fancy has been put back a few years. A great hindrance was caused to the workers by visitors, it being holiday time, and whenever a camera was put down a great crowd of curious people was soon round, intent upon looking into the lens to see the works and determined to have their photographs taken.

**Rotherham.**—The meeting held on 5th inst. was more than ordinarily interesting. Dr. Baldwin (President) occupied the chair. Mr. J. Leadbeater, the Treasurer, gave an explanation and demonstration of the wet plate or collodion process. He remarked that as an amateur of thirty-five years' standing he often looked back regretfully to the infancy of his acquaintance with the art of photography—when it was surrounded by a mysterious halo of wonder and expectation. The process was still thought by many photographers to give better results than any other method, and to his mind there was a brilliancy and transparency in collodion plates not to be found in gelatine plates. On this account it was largely used in making lantern slides. It had its disadvantages, however, which had led to its general abandonment for landscape work, the chief being the coating, sensitising, and developing of the plates in the field, an operation which necessitated the carrying about of a large tent, chemicals, bath, water, etc. Allusion was made to the numerous ingenious methods adopted to preserve the plate after sensitising, and some amusing experiences were given of the exposures which were necessary. The other business included the distribution of samples of Jacoby's collodion paper, and of several trade catalogues. "Hand Cameras" is the subject for the next meeting.

**South London.**—Annual meeting, April 4th. The officers presented their annual report, which showed the Club to be in a flourishing condition, and that several steps had been taken to increase its usefulness. The work shown at the last annual exhibition was a much higher standard than previously. The programme and list of excursions for the summer session promise to be very attractive. The officers for the coming year are as follows:—President, Mr. F. W. Edwards; Vice-Presidents, Messrs. Banks, Howell, Munyard, and Rice; Committee, Messrs. Boxall, Eldridge, Fallows, Fitness, Groves, Herbert, Lyon, Miller, and Webb; Curator, Mr. Moss; Hon. Secretary, Mr. C. H. Oakden, 51, Melbourne Grove, East Dulwich, S.E.; Excursion Secretary, Mr. W. F. Slater, 169, Southampton Street, Camberwell, S.E. Full particulars of the arrangements for the excursion to Canterbury on Easter Monday can be obtained from the Secretaries.

**Spenn Valley.**—An interesting meeting was held on the 12th inst., Dr. Farrow (President) presided, and in addition to a fairly good attendance of members, Mr. J. J. Stead, of Heckmondwike, and Mr. E. Brown (Russia) were present as visitors. The President made an appropriate reference to the death of Mr. Percy Walker, of Hartshead, one of the society's most enthusiastic members, and the secretary (Mr. E. Hirst) was instructed to convey to the widow the sympathy and condolence of the meeting. Subsequently the President made the satisfactory announcement that, up to the present,

the subscription sent by the society towards the Maddox testimonial fund was, with the exception of the Camera Club, the largest amount forwarded by any society in the country. Mr. G. T. Markland, A.C.P., of Liversedge, then read an interesting paper on "Photography, Ancient and Modern." He said the study of photography, apart from its utility, was one of the most powerful agents for the cultivation of the æsthetic side of man's nature. Mr. Markland gave a short history of the progress of photography, since the primitive discoveries of Mr. Thomas Wedgwood in the commencement of the present century. A brief description of the methods adopted by M. Niepce, M. Daguerre, and Mr. Henry Fox-Talbot, was then given, and somewhat extended reference was made to the utilisation of collodion in 1850, and to the more modern dry-plate process. After Archer had brought out his collodion process, photography for the first time became a popular amusement with those who had a leaning to art or science. Many found, however, to their disappointment and disgust, that a mere transcript from nature was not necessarily a picture, but that as much art culture, if not as much skill, was required to produce such when the tools were the camera and lens as when they were the pencil and brush. Another era had now arisen in photography—that of the dry plate process—and although artistic judgment was as necessary as ever, that uncommon combination, a mind equally artistic and scientific, was required to a less degree than before, and amateurs were enormously on the increase. The advantages of photography were becoming daily more manifest, and viewed either as a branch of the fine arts or as a medium for furthering the cause of science and education, photography must be regarded as one of the most beautiful and useful inventions of the present century. A discussion followed the reading of the paper, in which Mr. Stead mentioned that in 1851 the late Dr. Sykes, of Cleckheaton, prepared for the well-known Sarony, the first collodion which was used in this district. Sarony's caravan was at that time in Cleckheaton. Specimens of daguerreotype and collodion photographs were shown, and commented upon. The President alluded to the recent exhibition of old silver prints in London, and said that some of the specimens which had been in existence since the 50's, and had not been at all cared for, were as brilliant to-day as when they were finished. As a rule the silver prints of to-day were not as permanent. Later in the evening a monthly competition scheme was arranged.

**Southsea.**—It was resolved at the monthly meeting, held on the 6th inst., to hold an exhibition of prints and lantern slides in September next, the details to be arranged by the Council in July. Mr. J. J. Thornton, one of the delegates to the Affiliation Committee, gave a detailed report of the proceedings at the last meeting, and satisfaction was expressed with the progress made by the scheme. The first excursion of the season will take place on Easter Tuesday, to Netley Abbey, the results to be exhibited at an early meeting. Mr. A. H. Wood was elected a member of the Council, vice Mr. R. Leventhorpe, resigned, and two new members were admitted.

**Stockton.**—The ordinary monthly meeting was held in the Society's room on the 12th inst., when Mr. H. Macdonnell presided over an unusually large attendance of members. The special attraction was the bromide enlarging demonstration given by Mr. Downs, he using the new Eastman's enlarging lantern, which a few of the members have purchased for the Society. Mr. Downs proved himself to have a thorough grasp of his subject by producing several enlargements.

**Sydenham.**—At a meeting of this Club held on the 12th inst., a demonstration of "Autotype" was given by the Autotype Company. Beautiful specimens of prints on paper, opal, and glass were exhibited. The colours ranged from red chalk to engraving black. After giving a short history of the process, the demonstrator explained the method of printing by the aid of the actinometer, and the absolute permanency of the carbon process. A number of prints were developed before the members of the Club. The whole process is simple, easy, and very artistic. Various specimens of materials used were passed round and explained to the members. An extremely interesting evening ended with a hearty vote of thanks to the demonstrator and to the Autotype Company.

**York and Vicinity.**—The usual monthly meeting of the Yorkshire Philosophical Society (Photographic Section) was held on the 4th inst. Mr. F. Cattley exhibited a number of lantern views of landscape photographs, taken in the neighbourhood of Windermere and Grassmere. Unfortunately for the artist, sunshine was almost entirely absent, so that the views presented a certain amount of flatness and general tameness, failing to do justice to the scenery, as well as to the artistic efforts of the photographer. In the majority of cases of landscape work, a gleam of sunshine, at the least, is essential to the production of crisp, sparkling negatives, giving prominence to the foreground, and due emphasis to the different planes of the picture. Mr. Cattley afterwards read a paper on the uses of Fry's "Roughest" bromide paper, and detailed the necessary manipulation required in the toning of the same with uranium. During the last few months this paper has attained a position of deserved



superiority among those workers who strive, by means of the camera, to produce effects almost indistinguishable from those produced on rough-surface drawing paper by the use of the brush, and which must certainly tend to establish the claims of photography to be considered art. Mr. Cattley carefully pointed out the few pitfalls inherent to the process, and the means to be adopted in escaping the same. The subject was illustrated by a number of most excellent landscape and portrait studies printed on this paper.

### SOCIETIES' FIXTURES.

- April 20. BURY.—Monthly meeting.  
 „ 20.—PHOTOGRAPHIC CLUB.—“Masking, Vignetting, and Printing-in Clouds.”  
 „ 21.—LEIGH.—Arrangements.  
 „ 21.—HUDDERSFIELD.—Lantern exhibition.  
 „ 21.—LONDON AND PROVINCIAL.—“Photography and Crime.”  
 „ 22.—CROYDON.  
 „ 22.—HOLBORN.—Lantern night.  
 „ 22.—RICHMOND.—“Platinotype Printing.”  
 „ 22.—WEST LONDON.—“The Artistic Improvement of Negatives.”  
 „ 25.—BELFAST.—Annual meeting.  
 „ 26.—EAST LONDON.—Ordinary.  
 „ 26.—CORNISH.—Business.  
 „ 26.—CLEVELAND.—Lenses.  
 „ 26.—NEWCASTLE-ON-TYNE.—Paper and demonstration on “Enlarging,” by Mr. F. Park.  
 „ 26.—LEITH.—“Isochromatic Plates,” “Printing-out Paper.”  
 „ 27.—COVENTRY AND MIDLAND.—Lantern night.  
 „ 27.—LEYTONSTONE.—Members' lantern evening.  
 „ 27.—PHOTOGRAPHIC.—Photography.  
 „ 28.—HACKNEY.—Lantern night and auction.  
 „ 29.—HOLBORN.—Lecture and demonstration on “Process Work,” by R. Laxton.  
 „ 29.—RICHMOND.—“Developing,” by F. P. Cembrano.  
 „ 29.—BRISTOL.  
 „ 29.—WEST LONDON.—Technical social meeting.

**Messrs. Wilkinson and Co.**, of 15, Holmeside, Borough Road, Sunderland, the well-known firm of lantern slide makers, are turning out some excellent work of very high-class quality. They also supply single, bi-unial, tri-unial, and slide by side lanterns, and all accessories and fittings. Those of our readers who want any slides made, or anything in this line, cannot do better than give Messrs. Wilkinson and Co. a trial, as their prices are reasonable and within the reach of all, and they claim to be able to produce superior work to any operator on gelatine plates, which they do not use at all. A special branch of their business is lantern slide painting and excellence of results, and artistically true colouring is the distinguishing characteristic of the same.

**Researches on the Alternating Current Arc.**—M. Blondell has recently presented to the French Physical Society the results of his researches on the alternating current arc. He has, by means of photography, obtained a graphical representation of the different phenomena. The method employed, suggested by that of the rotating mirror, consists in projecting an amplified image of the arc on sensitised bromide paper, applied to the surface of a drum put in motion by the spindle of a dynamo. By the aid of a screen, pierced by a narrow slot, an impress of the frame of the arc is

obtained. M. Blondell has studied the matter from various aspects. He showed first the advantages of self-induction for insuring steadiness of short arcs. He has proved that the principal transference of carbon takes place in the arc from the positive to the negative electrode with a rapidity of about 160 metres per second. He has shown also the effect of continuous magnetic fields arranged transversely and in parallel, and shows that the singing of the arc which results must be attributed to the periodic breaking off of small pieces of carbon. The ordinary singing of the arc is explained in a similar manner. With regard to the experiments of M. Blondell, M. Joubert calls attention to the fact that he made similar experiments on the subject about twelve years ago. He used a disc mounted on a dynamo spindle, and the carbons and the arc could be photographed and observed, whatever the frequency. It could be thus seen that at the moment the current is nothing the arc is extinguished, then re-lights, and the carbons reach white-heat. Some photographs have been taken, representing the different phenomena presented.

**Lincoln Camera Club.**—The inaugural meeting took place on the 8th inst. at the Church House. Mr. Gough, of Retford, gave a splendid address on “Photography,” illustrated by the lantern, after which songs and recitations were given, the evening closing with throwing upon the screen several slides of Lincoln, past and present, the duties of guide being admirably done by Mr. H. Mantle. About 250 persons attended and seemed delighted with the attempt to please them. The President, Dr. Stott, was unable to preside, owing to illness. The meeting resulted in a few more additions to the membership.

### THE “OPTIMUS” 100 GUINEA COMPETITION.

THE conditions, classes, and prizes of the above competition, referred to in our last issue, are as follows:

A. That the lenses used should be of the well-known “Optimus” brand.

B. All the prints sent in to this competition shall become the property of Messrs. Perken, Son, and Rayment. The negatives of the prize prints shall also become their property.

#### CLASSES.

(1) Landscape, with and without figure. Subclass A, 7 by 5 and under; subclass B, 8½ by 6½ and over.

(2) Seascape. Subclass A, 7 by 5 and under; subclass B, 8½ by 6½ and over.

(3) Portraiture and figure study. Subclass A, 7 by 5 and under; subclass B, 8½ by 6½ and over.

(4) Instantaneous work, including also hand-camera work, limited to 5 by 4 and under.

#### PRIZES.

Apparatus to the value of:—

Class 1.—Subclass A, prize, £15; subclass B, £15.

Class 2.—Subclass A, prize, £15; subclass B, £15.

Class 3.—Subclass A, prize, £15; subclass B, £15.

Class 4.—First prize, £15.

The competition is open to all—AMATEURS and PROFESSIONALS.

### To Correspondents.

All communications for these columns are to be addressed to **The Editor, “Amateur Photographer,” 1, Creed Lane, Ludgate Hill, London, E.C.**

#### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents

are requested to mention, in every instance, the *number and full title of the query* referred to.

### QUERIES.

5632. **Enlarging.**—Will some kind friend tell me how to enlarge with a magic lantern on bromide paper? I have a good 4 in. condenser and a good camera to work with.—CHRIS.

5633. **Hand-Camera.**—Would any experienced photographer kindly tell me which is the best and cheapest hand-camera in the market for taking quick negatives direct as lantern slides? Fallowfield's Faëlle seems to be capital, but rather more expensive than I want. Lens must be really good.—PHOTO CAPTAIN.

5634. **Outdoor Work.**—Will any kind reader inform what process is that done by those itinerant photographers where they take your photograph and frame it while you wait, sixpence? It is done outdoor, and the plates appear to be tin.—B. J. J.

5635. **Photomnibus.**—Would any reader kindly tell me if it is possible to take a fairly good photograph with a Wornald's Photomnibus? I have tried the Demon, but have not been successful with it. I should also like to know where I could get one of the former, and for how much.—MAGIC.

5636. **Exposure.**—Will some reader who uses Watkins' exposure meter kindly give correct exposure for following:—Landscape, open view, bright day (without sunshine), noon, present month, f/15, Ilford ordinary.—J. B.

5637. **Toning.**—I am using a toning bath for albumenised paper consisting of—

|               |    |    |    |    |        |
|---------------|----|----|----|----|--------|
| Borax         | .. | .. | .. | .. | 1 oz.  |
| Gold chloride | .. | .. | .. | .. | 1 gr.  |
| Water         | .. | .. | .. | .. | 10 oz. |

and a fixing bath of—

|       |    |    |    |    |       |
|-------|----|----|----|----|-------|
| Hypo  | .. | .. | .. | .. | 2 oz. |
| Water | .. | .. | .. | .. | 20 „  |

Sometimes I get a purple tone, and sometimes the prints will hardly tone at all, but whatever tone I get it generally changes to a pale yellowish-brown colour in fixing. I keep my dishes clean, and sometimes print rather dark, but generally with the same results. Can any reader say how I can rely upon always getting a purple tint, and retain it in fixing?—DARLINGTONIAN.

5638. **Plates.**—Can any reader tell me what maker's plates, and what rapidity must they be to be best suited for home portraiture?—P. D. BARNETT.

5639. **Light.**—How must a room be lighted to obtain the best results in home portraiture? Does it want a top light or one or two side lights?—P. D. BARNETT.



5640. **Aristotypes Turning Yellow.**—Can any reader tell me why the above prints turn yellow on being immersed in the fixing bath? The acetate toning bath is used, and they are fixed with sodium hyposulphite 1 part, water 10 parts. My print tone beautifully, but have the above failing, and I find that they regain in a very small measure the tone required when drying. Ought they to turn such a colour or not? If not, any remedy would greatly oblige.—P. D. BARNETT.

5641. **Photographing Athletics.**—I have recently bought suitable apparatus for taking extraordinarily fast instantaneous photographs, and should like to try my hand at some of the incidents at athletic sports. Can anyone inform me the most suitable way to get permission to go, if needful, inside the enclosure to avoid the crush and to get a proper standpoint? Would such permission probably be readily granted, or be difficult to obtain? Any suitable information on this subject would be much appreciated.—THERMO.

### QUERIES UNANSWERED.

April 1.—Nos. 5555, 5568, 5570, 5574, 5577, 5578.  
 „ 8.—Nos. 5580, 5581, 5584, 5585, 5586, 5587, 5588, 5590, 5591, 5593, 5596, 5597, 5603, 5605, 5607, 5609, 5610, 5612, 5613, 5621, 5623.  
 „ 15.—Nos. 5624, 5625, 5626, 5627, 5628, 5629, 5631.

### ANSWERS.

5630. **Print Washer.**—Make a wooden box, say about 18 in. square and 1 ft. deep, and from the bottom lead a bit of pipe up the outside to within half an inch of the top, and then bend it down again towards the bottom. Make a very small hole on the upper side of the bend to let air into the pipe. This prevents the box ever becoming empty through stoppage of the water supply. Then make a number of frames (like picture frames, and just fitting inside the box) of  $\frac{3}{4}$  in. wood, and nail perforated zinc to the bottom of each. To use the machine, put one of the frames into the bottom of the box, zinc side down, and lay one or two prints (according to size) on the zinc. Place another tray on the top, put in prints, and so on till the box is full. The thickness of the frames prevents the prints from ever touching one another. If F. W. G. puts the machine under the falling water, he will find his prints most thoroughly washed. They cannot possibly be torn, as any increase of water will simply run over the edges of the box. The cost of construction is very small.—J. G. P.

### EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED: AM: PHOT:

T. P.—(1)

Sandarc .. .. 1 lb.  
 Venice turpentine .. .. 4 fluid oz.  
 Oil of turpentine .. .. 8 „  
 Alcohol .. .. 1 gallon

(2) Halation and the sideways extension of the deposition of the silver is the cause of the appearance you speak of.

**ENQUIRE.**—The old camera you have is certainly equal to turning out perfect work with a new lens, and for preference the R.R. you name; at the same time you would find it a great advantage to have one of the long-extension cameras of a later make. Any further help we shall be pleased to give you, but you must clearly let us know how much you want to spend.

**J. KIRKPATRICK.**—It would be impossible to answer your query without seeing the lens, but very probably the back lens of the back combination has been misplaced and thus the lens will not work well. If you like to send us up the lens and a print, we will see if we can help you.

**W. R. P.**—If you discard glass, the only thing to use is celluloid, provided you want to focus, by looking through it; but if you focus by looking at the image, then a perfectly plain piece of cardboard would answer your purpose. We think you are making a mountain out of a molehill. Why not wait till you get the glass broken, and then cry out? (2) Yes, a single lens will give good results in copying, provided absolute rectilinearity is not required.

**R. A. R. BENNETT.**—Zeiss' Anastigmat, Series III., No. 3, 5 13-16ths in. focus, price 90 shillings. A mark is equal to a shilling.

**JOHN FAULKNER.**—If you replace the sulphite of sodium or soda, both being the same, by metabisulphite of potash, or by acid sulphite of sodium, you would find you could keep either pyro or hydrokinone or a mixed developer almost indefinitely. Allow 1 oz. of metabisulphite or 1 oz. of acid sulphite to every 4 oz. of sulphite of soda used. The mixed developer when it has turned red works well with us. Sulphite of soda should never be kept loose, only

sufficient should be bought for actual need, and that used at once. If you add the acid sulphite to the Ilford developer, it will keep well. See next note.

**W. C. SEATON.**—Acid sulphite of soda is prepared by passing sulphurous acid gas into a mixture of carbonate and bicarbonate of soda till saturated. This is hardly a practicable operation for you, is it? Marion and Co. would send you down a bottle of their "Theonine," which is this specially prepared for use.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word: compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m. and other communications having reference to the Sale and Exchange column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Burnisher.**—For sale, 9 in. roller, never used, 8s.—J. Jeffries, 49, Chapel Street, Handsworth.

**Cameras, etc.**—Lancaster's quarter-plate 1891 Instantograph, complete, one dark slide, perfect condition, 25s. 6d., cheap.—R. Banks Park, Eccles, Manchester.

Mawson and Swan's half-plate, square bellows, three double slides, cost £9, perfect condition, £4 10s.—J. Armistead, Dalton-in-Furness.

**Cameras, Lenses, etc.**—Half-plate camera, square bellows, lens, shutter, double back, folding tripod, 50s.; 12 by 10 mahogany enlarging camera, dark slide, and carriers, 30s.; Rhinokorf coil, 2 in. spark, 50s.—Box 31, Littleborough, Lancs.

**Enlarging Apparatus.**—Complete enlarging apparatus, stained wood body, 3-wick lamp, 4½ in. condenser, extending front, with portrait lens, cheap, 25s.—David A. Law, 3, Bridge Street, Bacup.

**Hand-Cameras, etc.**—For sale, a Fallowfield Facile in waterproof case, R.R. lens, cost £4 10s., price £3.—Apply, C. Bagshaw, H. S. King and Co., Pall Mall, S.W.

Kodak, No. 3 Junior, latest pattern, only used once and still containing 40 unexposed 3½ by 4½ films, cost £8 7s. 6d., will sell for £7; going in for larger camera; also Kodak walking-stick stand, new, 15s.—C. Christy, 20, Lauriston Gardens, Edinburgh.

Swinden and Earp hand-camera, 5 by 4 plate, good as new, £6.—Roderick, Wellfield, Llanelly.

Facile, hardly used. Offer? Sale, or hire.—Camera, 15, Stoke Road, Guildford.

**Lenses, etc.**—7 by 5 rapid rectilinear lens with iris diaphragms, stop 8, 8½ in. focus, very sharp, new, 40s.; good all-round lens.—David A. Law, 3, Bridge Street, Bacup.

Lancaster's half-plate W.A. lens, gives good definition, with wooden adapter for Instantograph if required, good condition, only 11s., post free.—A. Wheatley, Pentreoch, Cardiff.

**Sets.**—Lancaster's half-plate Meritoire camera, extra front, lens, three stops, four double dark slides (three new hook-form by Talbot and Eamer), one carrier, tripod, a bargain, 80s.—David A. Law, 3, Bridge Street, Bacup.

Lancaster's quarter-plate Meritoire, two double dark slides, lens, and stand, perfect condition, 20s. cash.—Tom Reveley, Wantage.

Half-plate camera, London made, every movement, R.R. lens, three double backs, improved folding stand and bag, all new last year, £5, a bargain.—Walter Gill, 1, Foxberry Road, Brockley, S.E.

Superior half plate outfit, complete, £7; also quarter-plate hand-camera, 12s. 6d.—Mathews, 69, Monk Street, Derby.

Lancaster's half-plate kit, complete, with extra portrait lens, cost £7, will accept £4 10s.—Hill, 104, Wavertree Road, Liverpool.

Swinden and Earp's 5 by 4 hand-camera, leather covered, carry 20 plates, D lens, especially fitted by Taylor, Taylor, and Hobson, with macintosh cover, bamboo tripod stand, in capital condition, cost £12, price £7.—P., 32, Sydenham Avenue, Liverpool.

Whole-plate camera and case (almost new), three double backs and carriers, portrait lens, working at f/4, and stops, R.R. lens and stops, splendid definition, ash tripod and case, focussing cloth, printing frames, dishes, 2 doz. Ilford plates, cost about £34, will sell for £15. Can be seen after 5 p.m.—9, Richmond Place, Holloway.

Half-plate camera, best make, with all improvements, square leather bellows, three double dark slides and three double American dark slides, £5 10s.; canvas case for the above, 12s.; Optimum Eury scope lens, cover 7 by 5, £3 10s.; Taylor's rapid rectilinear, iris diaphragm, 6½ by 4½, £3; Taylor's mid-angle, half-plate, £3, for sale, together or separate. Developing trays, printing frames, etc., would be given to purchaser of the whole outfit. Can be seen by appointment any time.—Frederick Holmes, French Embassy, Albert Gate, London.

Bradley 7½ by 5 camera, very light, reversible back, all movements, 6 double backs, Dallmeyer whole R.R., Wray 7½ by 5 landscape, Reynolds's 5½ mid-angle lens, tripod, canvas cases, Phantom shutters, mahogany light-tight box, printing frames, developing dishes, washing trough, all in perfect condition, an Eastman roller slide, 7½ by 5; cost over £25, take £15 for all.—Apply, Dr. Waddington, Lindum House, Arncliffe, Leeds.

Half-plate 1891 Instantograph camera, new, fitted R.R. Optimum lens, complete, with tripod, folding legs, sundries, £4 10s. lowest.—J. B., 29, Farringdon Street, E.C.

Raymen's camera, 5 by 4, six double backs, Optimum Eury scope lens, Kershaw's shutter, stand, cash, £7 10s.; also 5 by 4 Optimum W.A. symmetrical, 25s.; Cope, Croft House, Ashbourne Road, Derby.

For sale, Sands and Hunter's 5 by 4 Imperial camera, with three double backs, Optimum R.R. and W.A. lenses, canvas case, and tripod, price £6; Newman's whole-plate shutter, 15s.; Houghton's changing tent, 12s.—Pratt, East Bridgford, Notts.

Half-plate complete set, all contained in single leather case, cost £13 10s., quite new. What offers? Or exchange for really good cushion tyre safety. May be seen at the office of this paper.—No. 275, 1, Creed Lane, E.C.

**Shutters.**—Kershaw shutter, equal to new, 2½ hood, fit half-plate or 7 by 5 lens, cost 21s., cash 10s.—Hellon, 5, Victoria Park, Aintree.

Newman's whole-plate shutter with parcel of cloud negatives, 15s., carriage paid.—Hill, 104, Wavertree Road, Liverpool.

**Stereoscopic Apparatus.**—Lancaster's stereo. Instantograph, very little used, three double dark slides, with Lancaster's stereo. shutter, with legs and tripod, in good condition, price £3 10s.; also a 14 in. Eastman's burnisher, used only once or twice, excellent condition, with lamp, complete, cost £10, price £7 10s.—Henry B. Wilder, Sulham Rectory, Reading.

**Sundries.**—Ormondo Safety, fitted with cushion tyres, ball bearings throughout, including pedals, nickel plated, first-class machine and without a fault, satisfaction certain, £17s. 6d. for cash; exceptional bargain; worth much more; approval willingly.—W., College Buildings, 6, Tower Street, Ipswich.

For sale, Lancaster's Instantograph, lens, See-Saw shutter, retouching desk, compound focuser, two lamps, squeegee, and pulp slab, two printing frames, plate box, scales, plain neutral background on roller, everything new, cost 60s. What offers?—B. Dry, 22, Richmond Terrace, Clapham Road, Clapham, S.W.

### WANTED.

**Cameras, etc.**—Wanted, half-plate portrait camera, must be cheap; approval; state price.—R. Meredith, Trawsfynydd, North Wales.

**Hand-Cameras, etc.**—Good hand camera, quarter-plate, the ideal preferred, cash. Full particulars to Rodgers, 31, Hall Road, Handsworth, Birmingham.

**Rollholder.**—Wanted, quarter-plate. State maker, lowest price; on approval.—N., 82, St. Thomas Road, Finsbury Park.

**Sets.**—Wanted, half-plate set, with rectilinear lens; will exchange new Rational bicycle, 52 in., or eell.—John Lowden, 37, Maryland Road, New Town, Stratford, Essex.

Wanted, half-plate portrait lens, R.R., camera, and tripod.—Joseph Wilson, Camlough, Belfast.

Studio whole-plate camera, stand, lenses, and furniture, cheap.—A. Bates, Photographer, Hester Street, Northampton.

**Sundries.**—Wanted, album, good condition, to hold small photo print, also camera carrier for tricycle.—Herbert, Blackrock, Dublin.



# The AMATEUR PHOTOGRAPHER

Telephone No. 1645  
Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

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FRIDAY, APRIL 29, 1892.

[PRICE TWOPENCE.

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—Bath Exhibition—"Sale and Exchange" Column—Photographic Convention.

LEADER.—Notes on Enlarging.

LETTERS.—Chicago Exhibition (H. T. Wood)—Monthly Competitions (Dodd, Bibby, Harman Orr)—Developing Competition (H. J. F.)—The Kodak (W. J. Harrison)—Stereoscopic Photography (J. W. H.)—The Budget (Thompson and Co.)—National Record and Survey (W. J. Harrison)—Cutting down Bottles (J. W. Thorp, W. J. Cable)—Toning Bromide Prints (J. C. S.)—A Correction (F. Goldby).

ARTICLES.—Photographic Procedure (Wall)—Elementary Photography (Hodges)—Study and Practice of Art in Field Photography (A. Horsley Hinton).

APPARATUS.—Soltype—Fry's Opals—Pocket Changing Bag—Line Screens—Powell's Developer—Ross' New Concentric Lens.

SOCIETIES' MEETINGS.—Ashton—Bedford—Brehin—Brixton—Camera Club—Derby—Eastbourne—Faversham—Glasgow—Huddersfield—Ireland—Kensington—Leeds—Leytonstone—Midland—N. Kent—N. Middlesex—S. London—Southsea—Sutton—W. Surrey.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

### TERMS OF SUBSCRIPTION—

|                        |                         |                          |
|------------------------|-------------------------|--------------------------|
| UNITED KINGDOM.....    | Six Months, 5s. 6d..... | Twelve Months, 10s. 10d. |
| POSTAL UNION .....     | " " 6s. 6d .....        | " " 12s. 0d.             |
| OUT OF POSTAL UNION .. | " " 7s. 9d.....         | " " 15s. 5d              |

TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALK AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZEL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE AND EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

"Amateur Photographer" Monthly Competition No. 36.—  
"SEA PIECES AND RIVER SCENERY." Latest day, May 30th.  
—Prizes: Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER supplement, June 17th.)

AN exhibition will be held at Bath, which includes amongst other things photographs and photographic apparatus. Mr. W. M. Ashman, the Hon. Secretary of the Bath Photographic Society, has kindly sent us the necessary particulars:—

FLORAL, ART, AND INDUSTRIAL EXHIBITION, SYDNEY GARDENS, BATH.—Wednesday and Thursday, May 18th and 19th, 1892. Entries close on Friday, May 6th. All exhibits to be in the Gardens by 9 30 a.m., and to remain there until 6 30 p.m. on the second day. The Committee reserve the right to refuse any exhibit which may be offered.

The Committee will take all ordinary care of the exhibits, but will not be responsible for any loss or damage that may occur from any cause whatever.

Section B (Art Department), Photographic Exhibits.—Amateur: (1) views, (2) genre, (3) flash-light photography, (4) scientific, (5) lantern-slides. Professional: (6) portraiture, (7) enlargements, (8) views, (9) lantern-slides, (10) apparatus of recent introduction, (11) early specimens of apparatus and photographs, (12) other exhibits of interest besides those above named.

Section D (Art and Industrial Department), exhibits on sale.—In this department the products of art and industry generally will be accepted. For example, pictures (oil and water colour), statuary, carving, musical instruments, mechanism, sweetmeats, etc.

Section E (Private Art and Industrial Exhibits), for exhibition only.—Any objects of interest are invited for this class, including pictures, statuary, etc.

Entrance fee, 2s., which will entitle exhibitor to one ticket of admission for each day.

Contributors will be permitted to affix name and title on their work, and if professional, the price.

No entrance fee, no award, no cost for carriage.

These new features should call forth earnest support from all workers.

OUR "Sale and Exchange" column is used by many of our readers, and for the further safety and protection of both buyer and seller, we instituted the Deposit system and usually publish each week at the head of the column the following:—

"The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller."

It cannot be considered an insult either by buyer or seller for the one or the other to insist upon the above being complied with. Occasionally some advertiser does not take the trouble to insist upon the deposit, and generally regrets it. One of our correspondents sends us the following letter:—

"In February last I advertised in the AMATEUR PHOTOGRAPHER a half-plate camera, lens, etc., price £17 10s., and on the 17th March



received a post-card from Thos. Datcher, of Portarlington, to send kit on approval. I did so that night, and he wrote acknowledging receipt of kit, which he liked, but would look at it better next day. I did not hear from him for nearly two weeks, and I wrote to know what he was to do, and he replied about 25th March that he was to keep kit, and that he would forward the cash, £17 10s., on April 1st. I never heard from him, and on 8th April I wired, but got no answer. On 14th April I again wired, and received reply from Mount Mellick, that mine would receive attention. As I still got no remittance, I wired again, and the postal authorities informed me that he had gone, and left no address. I then wired to police, and they wired back that Datcher had left in January last."

We know nothing of this man, and shall be very glad if any of our readers can give us any assistance in bringing this scoundrel to book. We are glad to say that the police seem to be on his track, and we hope that he may suffer for his dishonesty. To allow any portion of our paper to be used as a means of swindling is the last thing we shall countenance, and we shall always be pleased to show anyone up who wrongfully uses our Sale and Exchange column.



As we have previously noted, the Photographic Convention meets this year in Edinburgh, in the week commencing July 11th, and Mr. F. P. Cembrano, jun., Hon. Secretary, informs us that at present the arrangements are:—

Miss Catherine Weed Barnes, of New York, will read a paper on "Amateur Photography in America."

Mr. Andrew Pringle, "Photography in Relation to Pathology."

Mr. C. H. Bothamley, "Orthochromatic Photography."

Mr. H. P. Robinson, "Individuality in Photography."

Other papers have also been promised, and a full programme will shortly be issued.



THE question of how to cope with the ever-increasing number of prints sent in to our Monthly Competition is one which we need not say has troubled us for some considerable time. Whether we are justified each month in sacrificing so much valuable readable space for the benefit of the competitors is, we think, doubtful, and we shall therefore be glad if our readers will kindly let us know their feeling upon this point. That the particulars of prints other than the prize ones can have any interest save for the individual, we do not see, and we are therefore much inclined to cut down the details and criticisms, and to divide all the prints into three classes, the third and worst set of prints to be passed over in silence, and the first and second class only to be criticised. This would relieve us of a lot of work, and would enable the competitors to judge as to what sort of position they take in the competition.



THE West Surrey Photographic Society will hold a specially interesting meeting on Wednesday, May 4th. Mr. Humphery will exhibit his new oxy-magnesium light, and Mr. Davison will demonstrate the working of the new platinotype paper, printing the same by the above light. Visitors will be heartily welcomed, but the number of tickets is limited, and therefore application must be made as early as possible to Mr. F. H. Smith, 107, Falcon Road, S.W. The new lamp and the new paper are both likely to cause considerable sensation when finally ready for the market. The demonstrations of the new light and that of the paper were the most interesting of all papers at the Camera Club Conference.



WE regret that pressure on our space has compelled us to hold over several notices of novelties, answers to correspondents, etc.

## NOTES ON ENLARGING.—VI.

### EXPOSURE.

HAVING obtained a critically sharp image, the next point to decide is what exposure is required; and the determination is perhaps quite as difficult and equally as important as in negative making. Various methods have been suggested, but before entering upon these it would be advisable to consider the factors which govern the duration of exposure:—

- (1) The actinic power of the light.
- (2) The density of the negative.
- (3) The intensity ratio of the stop.
- (4) The number of times of enlargement, or the distance between the lens and sensitive surface.
- (5) The sensitiveness of the material on which the enlargement is made.

(1). *The Actinic Power of the Light.*—The only satisfactory method of determining this is by the aid of an actinometer; and the most satisfactory, and, in fact, the only ones to use are those based upon the action of light upon bromide of silver paper impregnated with solution of nitrite of potassium. There are two such actinometers in the market, Stanley's and Watkins', in which the actinic power of the light is gauged by the time a bromide of silver paper prepared as above takes to match a standard tint. In connection with this point we would point out that it is said to be extremely difficult to exactly match the standard tint; but the following quotation from the instructions issued by the maker of the latter actinometer is worth consideration:—"In testing the light no notice should be taken of the exact colour of the sensitive paper, which may vary slightly with the humidity of the air; the depth of tint is the important point. The paper darkens rapidly in light; up to a certain point it is *lighter* than the standard tint, after this point it is *darker*. The point when it is neither lighter nor darker is that to be timed." To prepare a somewhat similar actinometer it is only necessary to soak ordinary bromide paper in a 10 per cent. solution of *nitrite* of potassium, and then to dry it in the dark. A small piece is allowed to darken in daylight, and the time accurately counted or timed by a watch, that it takes to deepen to a tint which may be arbitrarily chosen. This tint should then be matched in water-colours, and painted on a strip of paper. It must be noted, however, that the tint of the paint when dry must agree with the tint of the darkened paper. Now, to use this actinometer, paste the strip of painted paper on the top of a cardboard matchbox, place inside the box the sensitive paper soaked in the nitrite solution, and draw a small piece out and allow it to darken at a distance of about 18 inches from a No. 5 Bray's gas burner turned full on without flaring behind the half tones of a negative, noting accurately the number of seconds it takes to darken to the standard tint. Now take a sample of some bromide paper, Eastman's, for instance, and expose half a dozen sheets of the same paper behind the negative at the same distance, 18 inches, giving various exposures, then on developing these six sheets it will be possible to pick out one print correctly exposed; and from this we can establish one factor, which will enable us to calculate other exposures under other conditions. Thus if the actinometer paper takes 10 seconds to darken to the standard tint, and we find 8 seconds the correct exposure for the said negative at 18 inches from the gas burner, it will not be difficult to calculate the exposure for any distance or any more or less actinic light. For example, the exposure required for the same negative at a distance of 36 inches from the same gas burner is easily calculated by the rule that the exposure alters as the square of the distance between the light and sensitive paper:—



The exposure required at 18 inches = 8 seconds,  $\therefore$  the exposure required at 36 inches will be in the ratio of  $18^2 : 36^2$ , or as 324 : 1296.

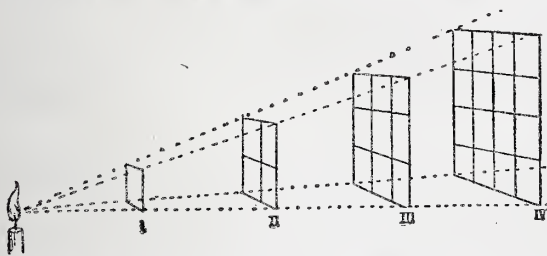
Now 324 : 1296 are as 1 : 4,  $\therefore$  if the exposure in the first case = 8 seconds the exposure in the second case =  $8 \times 4 = 32$  seconds.

This will explain the use of the actinometer, and determine the first factor.

(2) *The Density of the Negative.*—It is difficult to accurately determine this, as the actual deposit of silver does not alone represent the density of the negative. The colour of the deposit and the presence or absence of stain in the film will also influence this factor; but by using the actinometer as suggested under the first factor we practically determine the second factor also.

(3) *The Intensity Ratio of the Stop.*—Most workers know the usual definition of this term, which is the ratio the aperture of the stop or diaphragm bears to the equivalent focus of the lens; but when using a lens for enlarging, however, we never use it at its equivalent focus, the focus altering with the degree of enlargement. Therefore we have to calculate anew the intensity ratio of our stops for the new focus. Thus supposing we are using an  $8\frac{1}{2}$  in. focus lens for an enlargement of a quarter-plate to 12 by 12, or, in other words, if we are enlarging four times, the focus of our  $8\frac{1}{2}$  in. lens becomes  $10\frac{1}{2}$  in.; therefore, all the diaphragms will be proportionately reduced in ratio diameter. It will always be found more convenient if diaphragms of definite diameters are used. Thus special diaphragms of 1 in. diameter aperture or  $\frac{1}{2}$  in. diameter aperture can be obtained; and it is thus easy to calculate at once the new intensity ratio, without troubling to measure the diameter every time.

(4) *The Number of Times of Enlargement, or the Distance between the Lens and Sensitive Surface.*—It is requisite to take into account this factor, because, according to the well-known rule, the intensity of illumination on a given surface is inversely as the square of its distance from the source of light, or, in other words, the greater the distance of the sensitive surface from the lens the longer the exposure. This is very clearly seen from the following diagram.



Let L be the source of light, and if we place the bromide paper at I, 12 in. from the light, and we find the exposure to be 45 seconds, when we place the paper at II., III., IV. respectively, i.e., at 24, 36, and 48 inches, the exposure will not be 45, 90, 135, and 180 seconds, but in the proportion of  $1:2^2$ ,  $3^2$ ,  $4^2$ , or 45, 180, 395, and 720 seconds respectively.

(5) *The Sensitiveness of the Material on which the Enlargement is made.*—This has been, to a great extent, a matter of conjecture hitherto, and in *Photography*, November 13th, 1890, the results given by three contributors are summarised in the following table:—

|                 |     |     |    |    |                   |
|-----------------|-----|-----|----|----|-------------------|
| Iford Slow      | ... | ... | 80 | 90 | 85                |
| " Rapid         | ... | ... | 4  | 3  | $3\frac{1}{2}$ -4 |
| Fry             | ... | ... | 40 | 6  | 32                |
| Morgan and Kidd | ... | ... | 44 | 10 | 34                |
| Eastman...      | ... | ... | 44 | 20 | 60                |
| Mawson          | ... | ... | 50 | 6  | 85                |

These results in no way agree with the statements of the

paper manufacturers themselves; therefore, to give some definite results, the following trials were made:—Packets of the commercial brands of bromide paper were obtained and exposed under a Warnerke's sensitometer tablet, to a No. 5 Bray's burner, at a distance of three feet, and the development carried out under precisely similar conditions, and the following results were obtained:—

|                    |     |     |     |    |                |
|--------------------|-----|-----|-----|----|----------------|
| Mawson             | ... | ... | ... | 18 | 7              |
| Morgan and Kidd    | ... | ... | ... | 20 | 4              |
| Alpha              | ... | ... | ... | 14 | 21             |
| Eastman            | ... | ... | ... | 22 | $2\frac{1}{2}$ |
| " Rapid            | ... | ... | ... | 25 | 1              |
| Iford Slow         | ... | ... | ... | 16 | 12             |
| " Rapid            | ... | ... | ... | 25 | 1              |
| Fry's Argento-type | ... | ... | ... | 18 | 7              |

The first column shows the number obtained, and the second one the relative rapidities.

Before closing this note it would be but fair to give to Mr. Ferrero the honour of having first drawn out a table of exposures for enlarging, which was given in the *British Journal Photographic Almanac*, 1889, pp. 452, 614, which is here given:—

TABLE OF EXPOSURES FOR ENLARGING.  
BY E. FERRERO.

| Stanley's<br>Actinometer. | f/16     | f/22     | f/26     | f/32     | f/40     | f/48     | f/72     | f/100    |
|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| S conds.                  | min.sec. | min.sec. | min.sec. | min.sec. | min.sec. | min.sec. | min.sec. | min.sec. |
| 10                        | 0 9      | 0 17     | 0 23     | 0 36     | 0 53     | 1 20     | 3 0      | 5 47     |
| 15                        | 0 13     | 0 25     | 0 34     | 0 54     | 1 23     | 2 0      | 4 30     | 8 40     |
| 20                        | 0 18     | 0 32     | 0 46     | 1 12     | 1 51     | 2 40     | 6 0      | 11 34    |
| 25                        | 0 22     | 0 42     | 0 57     | 1 30     | 2 18     | 3 20     | 7 30     | 14 27    |
| 30                        | 0 27     | 0 49     | 1 9      | 1 48     | 2 46     | 4 0      | 9 0      | 17 21    |
| 40                        | 0 36     | 1 5      | 1 34     | 2 24     | 3 42     | 5 20     | 12 0     | 23 8     |
| 50                        | 0 45     | 1 24     | 1 54     | 3 0      | 4 36     | 6 40     | 15 0     | 28 54    |
| 60                        | 0 54     | 1 38     | 2 18     | 3 36     | 5 32     | 8 0      | 18 0     | 34 42    |
| 70                        | 1 3      | 1 54     | 2 42     | 4 12     | 6 28     | 9 20     | 21 0     | 40 29    |
| 80                        | 1 12     | 2 10     | 3 7      | 4 48     | 7 24     | 10 40    | 24 0     | 46 15    |
| 90                        | 1 21     | 2 29     | 3 28     | 5 24     | 8 18     | 12 0     | 27 0     | 52 0     |
| 100                       | 1 30     | 2 48     | 3 48     | 6 0      | 9 12     | 13 20    | 30 0     | 57 48    |
| 120                       | 1 48     | 3 16     | 4 36     | 7 12     | 11 5     | 16 0     | 36 0     | 69 24    |
| 140                       | 2 6      | 3 48     | 5 23     | 8 24     | 12 56    | 18 40    | 42 0     | 81 0     |
| 160                       | 2 24     | 4 20     | 6 14     | 9 36     | 14 48    | 21 20    | 48 0     | 92 0     |
| 180                       | 2 42     | 4 58     | 6 56     | 10 48    | 16 36    | 24 0     | 54 0     | 104 0    |
| 200                       | 3 0      | 5 36     | 7 36     | 12 0     | 18 25    | 26 40    | 60 0     | 116 0    |
| 225                       | 3 22     | 6 18     | 8 33     | 13 30    | 20 45    | 30 0     | 67 30    | 130 0    |
| 250                       | 3 45     | 7 0      | 9 30     | 15 0     | 23 0     | 33 20    | 75 0     | 144 0    |
| 275                       | 4 7      | 7 42     | 10 27    | 16 30    | 25 20    | 36 40    | 82 30    | 159 0    |
| 300                       | 4 30     | 8 24     | 11 24    | 18 0     | 27 40    | 40 0     | 90 0     | 174 0    |

"The table shows the exposures to be given to Eastman's and Britannia slow bromide papers, according to the actual intensity ratio of the lens, and to the actinic power of light as measured by Stanley's actinometer. Britannia rapid bromide paper requires one-fiftieth of the exposure indicated, and gelatino-bromide plates of ordinary rapidity one-fifteenths to one-twentieth."



## Letters to the Editor.

### CHICAGO EXHIBITION.

SIR,—May I ask you to give publicity to the fact that Her Majesty's Government, having increased to £60,000 the grant of £25,000 originally made for the purposes of the British Section at the Chicago Exhibition, the Royal Commission for that exhibition are enabled to dispense with the revenue it was proposed to raise by charging the exhibitors in proportion to the extent of space occupied, and that therefore all space in the British Section will now be granted free of charge.—Your obedient servant,

H. T. WOOD (Secretary).

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### MONTHLY COMPETITIONS.

SIR,—I am glad to see that Mr. McEwen has written to you *re* the above. I do not wish to pose as an artist, for I have had no artistic training, but I certainly think the judges have made a mistake this time. I entirely agree with what Mr. McEwen says as to Nos. 2 and 4, but I cannot agree with him when he says that No. 5 is inferior work. I think that technically and for a pure portrait it is excellent, but, of course, it tells no tale, so that not knowing the child it is of no interest to outsiders, wherein it differs from No. 3, which is interesting to anyone. The order in which I should place the photographs reproduced is 1, 3, and 5, and then 2 and 4, if they must come in, but I do not think they are worth it. If the author of No. 4 follows in his father's footsteps he should have some better things than this to show. As to No. 6, the print I have is so indistinct that it would not be fair to criticise, but it seems to me to be a very ordinary photograph of an old gentleman sitting at a table.

I am not a competitor and do not know any of the competitors, so that I am not prejudiced either against or in favour of any particular one.—Yours, etc.,

TOMMY DODD.

SIR,—Your correspondent, William McEwen, invites criticism on the judging in the competitions. When I enter a print in these competitions I am quite willing to accept the opinion of the judges and to cheerfully take the knocks you may think proper to administer. Of course, it is only natural I should think my own work the best sent in, but I send them to get the opinion of others more competent to judge than myself, and I find the criticisms each month of great value to me. I have one suggestion to make with regard to the judging—I think a number of judges would be better than two. I think if you got as many as you could to separately go through them and to vote for those they thought the best in the order of merit, from one to six or ten, and award the prizes to those pictures that got the most votes, it would give more satisfaction. This plan would allow scope for individual opinion. I am strongly of opinion that personal opinion has a deal to do with the judging in all competitions. The judges have their likes and dislikes just as we all have. It may be objected that this plan would cause too much trouble. I don't think so. I would not have a second person present whilst one was judging. I adopted this plan in deciding which picture I should send in. I placed a number in a room, and invited as many as I could get to give their opinion, and nine out of ten voted for the one I sent. I wish every success to the competitions.—Yours, etc.,

W. H. BIBBY.

Blackburn.

SIR,—Would Mr. William McEwen kindly send me a print from one of his negatives, that I may have a guide in future when trying to produce a pleasing portrait?

I would also greatly like an explanation of the phrase "to contain oneself for laughing." Is not the following more painful, as regards grammar, than my little portrait as a picture:—"As far as dress and surroundings is concerned"? How could an expression "form part of the meaning of a photograph" and still never be seen in a picture made by photography?

Thanking the judges most heartily for the leniency they showed towards the shortcomings of my little contribution, and yourself, Sir, for kindly inserting this in your paper, I am, etc.,

F. HARMAN ORR.

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### DEVELOPING COMPETITION.

SIR,—In to-day's AMATEUR PHOTOGRAPHER you invite suggestions on your proposed Developing Competition. For

myself I should be very glad to enter, and I think your criticisms on the results of such a competition would be very valuable to your readers, non-competitors and competitors alike.

Do you purpose sending the plates unmarked, or will they be marked "under," "correct," and "over," respectively? If the latter, I would suggest that a *fourth* plate be added marked "unknown." This would be a test of the competitors' ability to make a picture under each of the four conditions possible in dark-room practice. It may happen that with the three plates to which the known degrees of exposure have been given some of the best results may be very near in excellence. The degree of success with the plate of unknown exposure will then be a useful help to the judges in selecting the winner.

Another important question will be whether you will give the competitors information as to character of subject, quality of light, etc.; in short, the same information as they would have in their note-book (excepting, of course, the actual time of exposure) if they had exposed the plates themselves. Excellence of results, under known conditions as to subject, etc., will be more likely to show the skilful manipulator than when he has had to work without information.—Yours, etc.,

H. J. F.

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### THE KODAK HAND-CAMERA.

SIR,—The courteous Secretary (Mr. A. W. Rider) of the Eastman Co. writes me with respect to my recent articles on "Instantaneous Photography," that "all our Kodaks, except the Nos. 1 and 2, have lenses which are of adjustable focus." In my notes on the Kodak I wrote "the lens (except in the two largest sizes) is of the 'fixed focus' variety." The correction is of small moment, but the Kodak is so valuable an instrument that I am pleased to make it.—Yours, etc.,

W. JEROME HARRISON.

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### STEREOSCOPIC PHOTOGRAPHY.

SIR,—The hardness and general lack of atmosphere complained of by Mr. J. Craig Annan are not, I think, necessary features of stereoscopic pictures. I have seen slides in which such characteristics were, in my opinion, not apparent, though it must be admitted that such were rare exceptions and that Mr. Annan's criticisms fairly apply to the bulk of the stereograms ordinarily met with.

As a general rule, to be properly adapted for the stereoscope the pictures require to be distinguished by softness and the absence of "pluck." If a negative turns out with the contrasts a shade too decided for good effect in the stereoscope, it is better to reject it altogether for that purpose. Such a negative will probably yield an excellent lantern slide, or, if made on a half-plate, a good single picture of quarter-plate size. There is in each case the advantage of two halves to select from.

One is led to suppose it to have been a slide of this character which Mr. Annan had before him when making his remarks, as the half of a perfect stereogram is not, as a rule, so satisfactory by itself.

It is not difficult to see why for every decent slide commercially produced a hundred bad ones are made. The exaggerated effect, though offensive to the artist, catches the unsophisticated eye instantly, and they sell where artistic quality would not be in the least degree appreciated. Many amateurs, until they know better, also aim at producing *not* artistic results but striking stereoscopic effects, and the two are rarely compatible. Hence the prevalence of unfavourable opinion regarding the stereogram.

All stereoscopes are not irritating to manipulate. I do not like the types in which the slide has to be fixed in position between wires, or inserted through a narrow aperture; but if they simply have to be placed on a ledge the operation is no more disturbing than, for instance, turning over the leaves of a book.

A competition in stereo-photography, making "atmosphere" a great point in judging the pictures, would, if the best workers would submit their productions, furnish valuable aid in determining the capacity of the stereoscope in that direction.—Yours, etc.,

J. W. H.

Exeter.

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### THE BUDGET: PATENT FEES.

SIR,—The announcement of the reduction of the renewal fees on patents made in Mr. Goschen's speech will be read with satisfaction by all interested in patents, either as inventors, or as manufacturers and capitalists who have an ownership in patents,



and by all who are desirous of seeing the manufacturing supremacy of the country maintained, as undoubtedly many valuable patents have been sacrificed by inventors who have been unable in four years to recoup themselves for all their outlay. We know of instances of such occurring daily. The only mistake that Mr. Goschen has made is that he has not gone far enough. The reduction should have been greater, and should have come into operation at once. The reduction only amounts to £55, extended over the life of a patent, leaving renewal fees of £95 still to be paid instead of £150. If he had reduced it by £4 per year more, making the renewal fees commence with £1, and giving a total of £55, he would have rendered signal service to Lancashire and Yorkshire, and all manufacturing districts, without, we contend, reducing the total income derived from the fees, as on far the greater proportion of patents no renewal fees are ever paid at all. And we know many instances of patents that have been allowed to lapse, not because they were worthless, but because the tax was too high. The number of patents upon which the renewal fee of £10 was paid during last year was about 8,000, whereas the number of patents that had been issued, and on which, if they had not lapsed, the renewal fee would have been payable was 37,319, and on this number the fees at £1, £2, £3, and £4 respectively, for the fifth, sixth, seventh, and eighth years, would have amounted to £93,926, or a greater revenue than £10 on 8,000. We know, of course, that two or three years would elapse before this was fully realised, as many patents have lapsed that would otherwise be now in force. We think such matters should be brought before all Members of Parliament who sit for manufacturing districts; and we would advise all inventors and others interested in patents to write to, and urge the Member for their own district, to use his influence to have these fees, which are now a tax upon industry, reduced as low as possible.—  
Yours truly, WM. P. THOMPSON AND CO.  
(Patent Agents).

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## NATIONAL RECORD AND SURVEY.

SIR,—In connection with a paper, "Proposal for a National Photographic Record and Survey," which I am to read before the Photographic Society of Great Britain, on May 10th, I should be glad to receive particulars of any work in this direction, done by societies or individuals with whom I may not have been in communication.—Yours, etc, W. JEROME HARRISON.

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## CUTTING DOWN BOTTLES.

SIR,—I have been much interested in the correspondence in your columns under the above heading, and as everyone thinks his own plan the best, so I prefer mine to the use of either "diamond," "three-cornered file," "iron wire in fret saw frame, and emery-powder," or anything else.

The plan I adopt is effective, simple, and cheap, and I am now using a ruby lamp from a "hock" bottle, with the neck and bottom cut off in the following way:—

Saturate about a yard of worsted in pure methylated spirit, wrap evenly round the bottle where required to be cut, apply a light, turning the bottle round whilst burning, and immediately the flame goes out dip the bottle into cold water. A slight crack will be heard, and on gently tapping round the crack with, say, the back of a table knife, the neck or bottom will fall off as clean or cleaner than if cut with a diamond, even if the glass be  $\frac{1}{4}$  in. thick. The ruby hock bottles can be got very cheap from almost any hotel.—Yours truly, J. W. THORP.

SIR,—Unless a little caution is used by those amateurs who intend trying above, I think this "Tip Economical" will prove a troublesome and expensive matter. First of all I fail to see how they are to dispense with the services of a properly graduated measure, because, although dispensing bottles are exact as regards outside appearance (being made in moulds), yet owing to the uneven distribution of glass internally, the variation in some cases is rather large, and owing to the method in which they are made, this cannot be prevented; therefore, before they are cut down, a measure will have to be used in order to ascertain if the graduations indicate the correct quantity.

I have before me at the moment two bottles made in precisely the same mould; one is a very light bottle, and holds over the quantity at each graduation mark; and the other is heavy, and consequently holds under the required quantity at each mark.

Trusting this will be useful to some of your readers, providing you think it worth while to insert, I am, etc., WM. J. CABLE.

## TONING BROMIDE PRINTS.

SIR,—Since reading an article on "Toning Bromide Prints" with uranium which appeared in one of your recent issues, I have tried the process, and have been much pleased with it so far as the tone obtained is concerned. I found, however, considerable difficulty in getting rid of the yellow stain caused by the toning solution, and, by way of experiment, I immersed some prints in a solution of common alum, which effectually removed the yellow stain but in the majority of cases replaced it by a pale blue one. I have not sufficient knowledge of chemistry to trace the cause of this, and shall be glad if you or any of your readers can throw any light on the subject.

I enclose a print which very curiously shows the blue stain in the sky part alone, thus giving a kind of natural effect. Indeed, the stain only seems to appear in the white parts of the print, the shadows not being affected by it.—I am, etc., J. C. L.

[The result is very effective, though unlooked for, and is probably due to iron impurities reacting with the cyanide.—EDITOR.]

\* \* \* \*

## A CORRECTION.

SIR,—On taking up the AMATEUR PHOTOGRAPHER this week, I was surprised to see a short article under my name, said to have been communicated by me in a paper to the Brixton and Clapham Camera Club.

As some errors have crept into this, I feel it necessary to explain that a short time ago I gave a demonstration of the collodio-bromide process for lantern-slide making at one of the club meetings, but no paper was communicated, the demonstration being entirely practical, and the process described verbally, as the various operations were carried through. The assistant secretary asked me for a few notes of what was said and done, he not having been present during the whole of the time. These I roughly dotted down, and sent to him, thinking they were intended for a short report under the heading of "Societies' Meetings." These notes have, since they left my hands, been slightly altered, and are now published as an article. I having had no opportunity to correct them before publication. Had I known this was intended, I should, of course, have written a complete paper, and not a few crude and disjointed notes.

The errors referred to are:—

(1) It should be mentioned that the india-rubber mountant recommended for edging the plates should, before use, be diluted with benzole to a proper consistency, and the object of the edging was not given as "to restrain the flow of the emulsion," but to prevent the film slipping off the plate during the washing.

(2) I did not say that the manufacture of Mr. Brook's emulsion was "a trade secret." What I did say was that I had been unable to obtain the range of tone with emulsions that I had used of other manufacture, and also that the film was much more opaque, and consequently less liable to halation. These differences led me to suppose that he had some special method of his own of preparing it.

(3) The exposure given is incorrect; it should read "from one to four inches of magnesium ribbon (according to the density of the negative, and the warmth of tone desired), burnt at a distance of one foot from the printing frame."

(4) The developer used was not described as an ordinary "pyro and carbonate of ammonia," but was of the composition recommended by Mr. Brooks, consisting of an alcoholic solution of pyrogallol, and the alkaline solution of carbonate of ammonia with bromide of potassium and acetate of sodium.

I am sorry to trouble you with this lengthy explanation.—Yours, etc., F. GOLDBY.

[The paper was inserted as handed to us by the assistant secretary, and although the above misstatements were noted, we did not feel at liberty to alter them.—EDITOR.]

—•••••—

**Stellar Photography.**—Active operations with regard to the projected photographic atlas of the stars have now begun. The first photograph from the Cape has already reached this country and will doubtless soon be introduced to the scientific world through the medium of the Royal Astronomical Society. The plate takes in a square portion of the southern heavens less than four times the apparent diameter of the moon; it would be hidden by a shilling held at arm's length, and contains about 50,000 stars. Three hours' exposure of the plate was necessary for the result, thus yielding sufficient testimony to the excellence of the instruments used and the skill of the staff employed, for to the uninitiated observer it would seem no light thing to keep the camera continuously directed for so long a time to exactly the same point in the heavens.



## Photographic Procedure.

BY E. J. WALL,

*Author of the "Dictionary of Photography."*

### SECTION V.

#### THE SENSITIVE MEDIUM AND ITS SUPPORT.

THOUGH in my previous notes I have not in any way considered the chemical combinations which take place in the making of a gelatino-bromide emulsion, it will be obvious that to the merest tyro we have certain salts present which are not required, for if we add nitrate of silver to a soluble bromide, such as potassium bromide, we have bromide of silver and nitrate of potassium formed, and the latter salt is not required in the prepared plate, but would by crystallising out as the water evaporated, give rise to crystals which would not conduce to the final end, a perfect negative. The emulsion then is washed to remove these useless salts, and also to remove any considerable excess of soluble bromide which is not required.

There are several methods of washing, but to the amateur emulsion-maker the simplest is to place the set emulsion in the piece of canvas netting previously mentioned, to gather up the ends, and then twist the same and force the emulsion through the meshes, thus breaking it up into little nodules, or shreds, which, presenting a greater surface to the washing water, allow of a quicker extraction of the inert salts. The squeezing of the emulsion should always be done in distilled water, care being taken to wash both the hands and canvas well first, and rinsing the same in distilled water. In breaking up the emulsion in this way there is always some lost by adherence to the canvas, but not much; and where experimental batches of, say, 4 or 5 ounces only are made, the simplest plan is to cut the emulsion up, with a silver fruit-knife, into little dice, and then place these in a beaker of distilled water, stirring frequently during the course of an hour. If, however, it is inconvenient to give so much time to it, the simpler way is, collect all the dice on a piece of well-washed calico, gather up the loose ends and tie them together, and suspend the little bag thus made by the aid of a piece of string on to a glass rod, and place this across the mouth of a decent sized beaker or jar, and fill the jar sufficiently full with distilled water to cover the bag, and leave it for an hour or two. The water filling the bag extracts the useless nitrates and excess of bromides, and being heavier than the pure water sinks to the bottom of the vessel, so that there is always a current of water less heavily charged, and the washing is mechanically performed.

After about two hours of this soaking, the water should be changed, the bag being allowed to drain well before the vessel is refilled. Washing may thus be effected very thoroughly in from six to eight hours, or comfortably in a day. Twenty-four hours is not actually too much—in fact, very strongly recommended by Eder and other authorities. If a good supply of water is to be had, the washing may be performed by fixing the vessel under a tap and allowing the same to run on it all night, but personally I think it is better to use distilled water even for washing the emulsion.

There is one method of washing the emulsion which is, I believe, rarely used by commercial makers, and that is by the aid of alcohol, as was noted in speaking of Henderson's emulsion process. As soon as the cooking is finished, the still warm and liquid emulsion is poured into three or four times its quantity of alcohol, and well stirred round. The extraction of the unnecessary salts is not so complete and is more costly than when washing is effected with water, but it is of advantage in saving time and there is less chance of

frilling in the subsequent operations of developing, etc. After washing by this method, it is essential to allow the emulsion to soak in water for an hour, in order that it may absorb the necessary amount of water.

When the emulsion has been sufficiently washed, it should be collected on a piece of clean and well-washed linen, allowed to drain, and gently squeezed so as to press out the superfluous water, then collected and melted by placing it in a beaker or other convenient vessel, which should be placed in a water bath. Care should be taken not to heat the emulsion too much, or else it will become fogged and useless, and the more rapid the emulsion the less heat it will bear in this second melting.

However careful has been one's method of preparation and washing, one is never certain that the emulsion is free from mechanical impurities, such as little bits of fibre, hair, etc., and it is therefore advisable to filter the emulsion before use. For this purpose, flannel, felt, or wash-leather may be used, and whilst the flannel is the quickest to allow the emulsion to pass, leather is the most effectual. Personally, I always use a felt filtering bag, such as may be obtained from any chemist to order, about 2s. for a pint size, which will be too large for most amateur workers, as the bag absorbs too much emulsion, but the bag may easily be cut down to half its size. If wash-leather be used, it is necessary to wash it well in weak soda solution first, about 1 in 20, to free it from the natural grease, and then wash thoroughly to free from the soda.

When the emulsion is perfectly fluid it should be poured into the bag, presuming the felt bag be used, or into the wash-leather or flannel stretched on a filter. When the felt bag is used, it is only necessary to suspend it by its ring from a retort stand, or any convenient makeshift, and thus less emulsion is lost and it does not get cold quite so quickly. Gentle pressure on the top of the bag soon forces the emulsion through. With washleather it is almost necessary to have some pumping arrangement, and this may be either the ordinary indiarubber balls as used for spray diffusers, or the more powerful brass force pump used for filling pneumatic cycle tyres or footballs. When leather or flannel is used, the most convenient filtering apparatus I have found to be a small glass percolator, a utensil known to every chemist, and this fitted with a cork to the upper part or body allows one to affix the forcing arrangement.

It is advisable before using the emulsion for coating to add some bromide and a little chrome alum to the emulsion, the latter especially when the process adopted has been the ammonia boiling process, as this addition prevents fog and frilling. A 1 per cent. solution of bromide of ammonium and a 2 per cent solution of chrome alum should be made, and 1 oz. of each should be added to every pint of emulsion. The addition of chrome alum lowers the sensitiveness slightly; at least, so it is said, and certainly I think it does, but there are no ill effects if the chrome alum be rendered neutral by the cautious drop by drop addition of solution of ammonia.

The addition of the chrome alum solution should be made to the emulsion very gradually, with shaking between each addition, and this addition may be made either before or after filtration, preferably after. Many workers add a little alcohol to the emulsion, to make it flow over the plates; and it is, I think, to be recommended when coating is to be done by hand. One part of pure rectified spirit of wine to every twenty parts of emulsion is the right proportion.

Having thus proceeded so far, we shall now come to the actual coating of the plates, and see what are the necessary utensils, and method.

*(To be continued.)*



## Elementary Photography.

BY JOHN A. HODGES.

### CHAPTER XIII.

#### PRINTING ON GELATINO-CHLORIDE PRINTING-OUT PAPER.

The Process Described—Its Advantages—The Different Makes of Paper—How to Manipulate—Printing—Toning—The "Combined Bath"—Instability of Results—How to Prepare the Bath—Fixing—Surface—How to Make Enamel Prints—Squeegeeing—How to Dry the Prints—Matt-surfaced Prints—How to Obtain—Probable Permanence of the Prints—Severe Tests.

THIS, the latest development of silver printing, has now become exceedingly popular, and by most amateurs is preferred to the albumenised paper process just described. It possesses one great advantage over the latter process, which is that the surface of the print can be rendered at will either glossy, or "matt," as a surface devoid of glaze is termed. It is also slightly more sensitive, and consequently prints quicker than ordinary albumenised paper, at the same time it is quite as easy to manipulate.

There are several different makes of printing-out paper to be obtained from the dealers; they are all reliable, and the reader will probably succeed equally well with either. The first papers of this kind introduced commercially into this country were Obernetter's rapid printing-out paper and Liesegang's Aristotype; both of these are of German make. Then, under the supervision of Mr. Woodbury, an English firm brought out a similar paper under the title of Celero-type, which was followed later by the Ilford Company with their "printing-out paper." My advice to the amateur would be to select any one of these papers, and keep to it until perfect results can be easily produced.

So far as the actual printing is concerned, the operations are carried out in precisely the same way as when using ordinary albumenised paper. But gelatino-chloride paper being, as I have said, more sensitive, greater care must be taken, both in filling the frames, and in examining the prints, to avoid degrading the purity of the whites by unduly exposing the paper to the action of light. Negatives which are rather thin will give the best prints, and if the weather is at all damp a piece of india-rubber cloth may be used as a backing instead of the blotting-paper pads previously recommended. The paper will be found to print much quicker than albumenised paper, and the frames will, consequently, require to be more closely watched. Neither will it be necessary to over-print to such an extent as is required when using ordinary albumenised paper, there being less loss in the subsequent operations of toning and fixing. If the prints are to be finished off with a matt-surface, they should be less heavily printed than if a glazed surface is desired.

The prints may be then toned, either with a toning bath containing sulphocyanide of ammonium, and subsequently fixed, or the operation of toning and fixing may be performed together by using what is called the "combined bath," which is a toning bath containing sufficient hyposulphite of soda to effect the fixation of the prints at the same time as the process of toning is going on. This latter mode of working is not, however, one that can be recommended to a novice, for unless certain precautions are observed the prints may be liable to fade. This is partly due to the fact that the bath will sometimes continue to tone the prints after all the gold has been exhausted, and, to a novice, this would be perplexing, for such action is due to what is called sulphur toning, and prints so toned are extremely liable to fade. Notwithstanding this weakness, the combined bath, when properly used, gives most beautiful

results, and if the bath be not overworked, and if the prints are thoroughly washed after fixing, fading of prints is not very likely to ensue.

When the operations of fixing and toning are to be carried out independently, the toning bath may be made up as follows:—Dissolve 30 gr. of sulphocyanide of ammonium in 16 oz. of water, and add, subsequently, 2 gr. of chloride of gold. The bath should be allowed to stand twenty-four hours before it is used.

The procedure is similar to that laid down for the treatment of albumenised paper. Upon removal from the printing frames, the prints will require to be washed, preliminary to their being placed in the toning solution, in order that the unreduced nitrate of silver may be got rid of. Here a word of caution becomes necessary, for the sensitive surface, being composed of gelatine, is far more tender than the comparatively tough film of an albumen print, and requires, therefore, much more careful handling. The prints should be placed in the washing water one by one, and completely immersed by pressing them below the surface, so that air bubbles may not form on the surface, which would probably cause markings on the finished print. The washing water should be changed several times, or until it ceases to appear milky. The toning bath having been poured into a dish, the prints should be removed from the washing water and placed in the toning solution. Too many prints should not be toned at the same time, as the toning action is sometimes very quick, and it will be difficult to remove the prints before they over-tone. They must also be kept in motion and not allowed to lie still, or unequal toning would result. The best way to do this is to lift them up and turn them over with a small pair of ebonite forceps, which may be obtained at a dealer's for 6d. This is better than dabbling in the solutions, which should always be avoided. When the prints first go in the bath they will turn a rusty brick-red colour, but will soon begin to tone, going through all shades of reddish brown and chocolate to purple. When they reach a tone a little darker than the desired colour they should be at once withdrawn, and transferred to clean water, when they may be washed in the manner described for silver prints. The toning bath, after it has been used, should not be returned to the stock bottle, but should be kept separate, and may be used again, with the addition of a little fresh gold solution, until exhausted. The prints are then transferred to a freshly made hypo bath, consisting of hyposulphite soda 3 oz., water 10 oz., in which they are allowed to remain for ten minutes, after which they may be placed in the washing tank.

Two hours' washing by the method advocated for albumen prints should be quite sufficient for prints upon gelatino-chloride paper; if this time is exceeded, the gelatinous film becomes soft, and interferes with the "squeegeeing" process when it is resorted to. After washing, the prints may be either allowed to dry spontaneously, or squeegeed down to polished glass, or ground glass, according to the effect which is desired in the finished print. If allowed to dry without further treatment, a surface a little more glossy than that of an ordinary silver print will be obtained. Squeegeeing to polished glass, or ebonite, will give a fine enamel surface, while squeegeeing to ground glass will produce a matt or dead surface like an engraving. We must bear in mind that we are dealing with a gelatinous, or, in other words, a "gluey" surface, and therefore we must not attempt to dry the prints between blotting-paper, or they would stick together and be spoilt. The method I adopt is to procure a packet of very small pins, and pin each print by its four corners to a flat piece of board—a drawing-board answers the pur-



pose admirably. They should not be interfered with until they are dry, when the pins may be removed, and the prints packed flat under pressure until they are wanted for mounting. When a highly-glazed surface is required, the prints upon removal from the washing water should be placed in an alum bath, composed of a saturated solution of alum 2 oz., water 1 pint, and allowed to remain therein for about ten minutes, after which they should be again washed in several changes of clean water. A piece of very clean polished glass, or ferrotype plate, preferably the latter, which is obtainable at any photographic stores, is then taken, and the print lifted from the washing water, and laid smoothly upon the surface of the plate, picture side downwards; a piece of clean letter paper is then superimposed, and a roller squeegee applied firmly, but lightly, to remove the superfluous water, and ensure contact. The note-paper backing is then carefully removed and the plate reared up on end in a warm room to dry. Artificial heat must on no account be applied. The prints will detach themselves when they are dry, and will present a very high gloss. If it is desired to mount the glazed prints, the procedure will be slightly different. Squeegee down as above directed, and cut some pieces of black enamel paper (obtainable from Fallowfield and Co.) a quarter of an inch *smaller* than the prints; paste the white side, and stick it carefully on to the *back* of the squeegeed print, leaving a white margin of print all round, about an eighth of an inch deep; squeegee well down, and leave to dry spontaneously. When it is dry the print will fall off the plate. It may then be trimmed and mounted in the ordinary way, the backing preventing any loss of glaze through the paste used in mounting.

I have already referred to a few of the advantages of this process, but it possesses some others which may well be noticed. Not the least of these is its probable permanence, though in this respect it has yet to stand the test of time. Mr. Barker, to whom the credit of first introducing the paper is due, states that prints which had been exposed under glass, to all weathers, for a period of two years, did not show any visible signs of fading or deterioration, and I have prints in my own possession which have been most carelessly kept lying loose in a drawer in my dark-room, exposed to the fumes of both gas and chemicals, but which are, notwithstanding, as bright and fresh as when first printed. These prints were produced on Herr Liesegang's Aristotype paper.

Another advantage is that decent results can often be obtained from negatives which are too thin to yield a good print upon ordinary albumenised paper. To the question of surface I have already adverted, but the paper possesses the additional advantage that almost any effect of colour, ranging from bright red to black, can be obtained, which, in itself, is a matter of some importance to a photographer blessed with artistic proclivities. Upon the whole, therefore, I consider the gelatino-chloride printing-out process the very best that the beginner who wishes to print in silver can take up.

(To be continued.)

Herr F. S. Archenhold has published in the "Astronomische Nachrichten" his discovery, by means of photography, of a large nebula in the constellation Perseus, which showed about the same intensity in the photograph as the nebula in Andromeda. In the centre of the nebula there is an empty space, the nebulous matter seeming there entirely missing. Its length from the south-east to the north-west is about three degrees. What is remarkable in this discovery is that no nebula in that place is marked in old astronomical maps, while in the latest a very weak nebula is marked, while the one photographed by Herr Archenhold is one of the very brightest, though, when looked at through the strongest telescopes, it is barely visible.

## The Study and Practice of Art in Field Photography.

By A. HORSLEY HINTON.

(Continued from p. 232.)

### VII.—THE UTILITY AND FUNCTION OF HORIZONTAL LINES.

Now, however, notwithstanding the utility and importance in many compositions of horizontal lines, they must be introduced with judgment and discretion. In our remarks upon lines *leading into* the picture, we referred to the undesirability of a prominent feature crossing the picture, and so presenting a barrier or obstruction.

In this way a strong line passing continuously from one side of the picture to the other appears, except in exceptional cases, to cut the composition in two, and preventing the nearer part of the scene from gradually developing into the more distant, and, thus separating it, will in this way destroy the harmony of the whole.

We have pointed out the desirability of centralisation and of retaining the interest of the spectator at some point well within the margins of the picture. Now, at the same time, we wish to indicate the danger of conveying anything like a confined or shut-in impression.



The first of these principles (the forming of a centre to arrest the eye) may be well arrived at by such simple means as when a horizontal line starts from some opposing object, such as a tree, as in the accompanying sketch and that on page 232, wherein the sudden contrast of forms makes a point of attraction. Soon the eye seeks to follow the horizontal line vividly portrayed, which is seen to carry the attention in a straight line out of the picture, a result, however, to be duly guarded against and subordinated, both by making the central point of attraction strong enough and by keeping the horizontal line somewhat subdued as it approaches the margin. Provided this be attended to, we are convinced of the advantage arising from carrying the line *out* of the picture. It conveys to the mind an impression of openness, breadth, and a suggestion of limitless country around. Suppose, in either of the sketches before us, a bush, a tree, or other object at the right-hand edge of the plate stopped the further progress of the horizontal line referred to, see how altered the effect would be. Try the experiment with either of these illustrations, or even place the finger over a small portion of the line where it approaches the right-hand margin, and you will, perhaps, catch our meaning.

As a general rule, careful ever though we be to assert no rule, it will be found most satisfactory to let the more prominent horizontal line commence somewhere near the centre of the composition, making this its strongest and



most vivid point, and then letting it pass out of the picture with less prominence. It need not commence abruptly, but, by being broken, faintly visible, conveying the idea of passing behind the object the junction with which makes a striking contrast—little lights seen behind the openings in the foliage or between tree stems, the same effect as was noticed above, when we referred to the manner in which one plane might be relieved against another.

But there is another kind of horizontal line equally powerful, perhaps more so, and full of poetic beauty; it is the "level twilight," as seen beneath the lifting clouds or the lower edge of cloud masses illuminated by the sun just hidden, like bars of gold and purple. Lying close to the horizon, it gleams between each tree that lifts itself against the sky, it is seen through the thinner foliage of the upper branches; from the trees it passes behind the roofs of the houses, or quaint chimney stacks, to appear again on the further side. From purple and grey above, the mellow yellow light falls behind the uttermost distance like a curtain.

On the barren salt-marsh as it nears the sea-shore, the surface is broken by a labyrinth of channels, where sluggish waters find their way, the coarse growth of star-wort, thrift, and sea-lavender, or ranker still sedges and rough grass, crown the ridges or fill the hollows of dyke and ditch; dark beneath, reflecting bright light above, or lighter still when whitening with upturned leaves under the passing breeze, we get a multiplicity of lines from left to right, receding line upon line, and yet there is no monotony; some merge one into the other, unite and diverge, a little break here and there takes the eye into and across the scene to the haze which veils the horizon, and although the eye finds pleasure in contemplating just that particular scene and is satisfied, yet there remains the impression that had we wished we might have wandered on either hand with nothing to interrupt our gaze, there was no notion of circumscribing walls or hedges, and so if our picture of the scene was true and well conceived, we turned from it without remembering that it had a margin, and a frame to shut it in.

There is a poetry, a subtle beauty in these level, far-reaching lines, and though our description may have failed to convey one half that there is in them, we have at least called our reader's attention thereto, and the rest remains with himself chiefly.

Let us now briefly consider some of the minor objects in a landscape which may cause a few of those effects, lines, or forms which we find so desirable in our pictures. A fruitless journey to some particular spot, a river lock, a bridge, a streamside mill, some rural neighbourhood made famous by some picture which has acquired notoriety, may perhaps have proved to us before now that the precise time of year and season is of no less importance than the time of day and the position and condition of the light. And this because nearly every scene owes so much of its beauty to the vegetation which decides the disposition of lights and shadows, and controls the general configuration.

The preconsideration of the kind of district we may purpose visiting supposes some little scientific knowledge of nature such as the lover of the open fields will take delight in, an acquaintance with the times and habits of flowering plants and trees, with a knowledge of country life and occupations. Some brief notes of observations made, during previous rambles, on vegetable life, on the hundred varied forms which greet one at every turn and in every position, may be a valuable possession to the earnest worker, making permanent our gathered knowledge of nature generally, besides cultivating a habit of observing carefully and with definite purpose.

It is the same to some extent with a knowledge of rustic habits and occupations. The herd of cattle which give life and interest to the meadow or hillsides may be sought in vain before the time of hay making, and the field of long waving grass may obscure the footpath, the broken hedge-row and stile which we remember seeing last summer, when the picturesque groups of hay makers among the long rows of mown grass, grey green, and palest yellow beneath the parching rays, had given place to the flock of quietly grazing sheep.

Moreover, the knowledge of such things brings the student into greater sympathy with his surroundings, he becomes filled with an enthusiasm, aims higher, and accomplishes better things, because, being in love with his work, he will take greater pains; and further, he is less likely to act upon immediate impulse, but pauses and considers and thinks the matter out. Meeting for the first time a cluster of tall growing field flowers, impulse and taste untrained might prompt an immediate attempt at their portrayal; interest and admiration has been at once awakened by their individual and intrinsic beauty, but knowledge will suggest that at the further edge of the field, where there is cool shadow of trees and more uneven growth because of greater moisture, that there the flowers, themselves not less beautiful, may perhaps form a worthy feature in a picture, may be useful in forming a contrasting light or an harmonious balance.

A lowly plant which of itself is of no importance in the scene, and claims attention from the botanist rather than the artist, yet when met with in great numbers assumes a considerable pictorial importance, and may even constitute the chief motive of the picture. To take an extreme example—the brown and furrowed surface of the ploughed land and the field of waving corn owe their difference to the absence and presence respectively of the myriad stalks of cereals which, in the varying phases of a summer's growth, change the face of the landscape as the seasons come and go.

To-day the barren hill sides glitter with golden gorse, anon their lines are softened by a clothing of bracken fern and wiry grasses, and a marked variation in the forms of lights and shadows as well as in the amount of light reflected may be readily noticed from the time when the surface growth of the same upland region is newly sprouting in springtime, and the fall of the year when plant forms lay prostrate, blanched or darkly withered in decay.

The level mead of rough pasturage, a winding stream with shelving banks, and here and there an osier bed or pollard willow, are together eminently characteristic of a marshland picture, yet of themselves these features may quite fail to satisfy; but let the stream be fringed, as in the rich month of August, with rushes and tall water plants, and the light which plays upon the bending stems or the scattered regiment of plumed heads, form lines which link the various parts of the picture together, broad belts of shadow where the reeds grow tallest stretch across the picture, giving strength and breadth to the composition. Notice too the deep reflections filling up nearly the entire width of the water, which before these stately plants grew up was a flat unbroken space of blue; and pause awhile and notice the difference between reflections and shadows—how many people there are who regard the two as synonymous! Sunshine or cloud, the reflections are always beautiful, and vary most according to whether the water be still or moving—in perfect calm each detail is clearly mirrored or drawn out vertically, each feature, each colour softly merged in each other; but the surface disturbed by waterfowl or by fish, and the flowing ripples break up the dark reflection into strange zigzag ribbons, which at first seem to writhe like serpent-like, and then become disjointed and separate into



little shuttle-shaped lights and darks, or into alternating lines which, sharply defined at first, are repeated again and again, each succeeding ripple softer in form and smoother than its predecessor, until tranquility returns.

Then note the shadows lengthening and widening every moment as the sun sinks lower, stealing across and breaking up into horizontal masses the bright green or yellow areas, and mark how happily the small clusters of pale blossoms of the flowering rush (*Butomus*) brighten and give greater value to the deep shadows of the grey willow trees; they catch the eye and claim the attention when, perhaps, there is little else of moment to attract. How brilliant, too, is the light caught by the shiny surfaces of water plants, such as the "arrowhead" (*Sagittaria*), bright flashes of intense light often coming in groups or in masses against the dark reflections behind. Never miss an opportunity of observing the value of those outstretched masses of white flowering water-ranunculus often accompanied with floating grasses and compact weed of vivid green. Remember how the late Mr. Keeley Halswelle employed these things. These at least will give you an example in horizontal lines so forcible as to be capable of altering even the most obstinate of forms. Yet, perhaps, most wonderful of all, the effects which the reeds in our marshland give us are seen from latest autumn until the new life of spring supplants the older generation. Stems and blade-like leaves are now broken, pressed down, and twisted by winds and rains, and the forms they assume are amongst the most fascinating things of river scenery, torn and shattered, with here and there a few tall stalks surviving erect; all greenness has gone out of them; and, white or yellow interspersed with deepest brown, they are in most positions by far the highest light in the whole scene. Most striking are they when seen in a bright gleam of sunshine against the black mass of leafless trees and undergrowth and heavy masses of purple rain clouds. The reed bed is then a thing to be remembered, and makes a picture to be attempted, only take careful memorandum of the relative values, or you may be surprised to find how high in tone these broken reeds really are. But mingled with the rushes are tall plants of willow herb, water docks, and parsnip. The giant umbels of water parsnip and its closely related species have been painted again and again in foregrounds often introducing a welcome light amongst the dark greens; nor need we remind our readers of so popular a feature as thistle-down. Thistles at all times are useful, their tall but irregular forms often give variety where there would otherwise be blank monotony, and their blossoms pale in colour come very light in sunshine, and then in their seed time the clusters of silky down are so close together that we often get a winding track or widened sheet of delicious silvery greys. Just such an effect we found last summer on a marshy plain in Sussex where thistles were abundant, and there was almost a phenomenal crop of seed. Viewed from a little distance, the surface was as though wrapped in a stratum of thick mist, with here and there protruding dark masses of gorse bushes and crowns of golden ragwort. More brilliant contrast it had been difficult to imagine, and away in distance, grey thistle-down and rushes, red sorrel and long grass formed line above line toning softly into the hazy distance of a sultry day. We set out next day for that spot with the camera, with high hopes of securing something of this delightful picture, but on our arrival startling indeed was the change that had taken place. A breeze and some rain had occupied the dark hours that had intervened, and all that lovely veil of silky thistle-down had vanished; only a few heads remained, and these be-draggled and drooping. "Gather the rose buds while ye may." Our little incident may serve as a useful lesson; at

least it was an example of how much in a scene may depend upon precise time of year and conditions of weather, and the effect of these two factors upon the plant life abounding.

The common land that skirts the village is pleasantly diversified with the clumps of green-brown quill-like rushes which grow in such remarkably rigid fashion, and they become ten times more important when seen *against* the light so that their dark clusters may be opposed to the brightness beyond.

In the forest clearing, bracken ferns in all their summer glory are difficult things to render, their light-reflecting surfaces come so very light and are difficult to manage; moreover, when undisturbed they lack variety; but in winter or very early spring the carpet of withered fronds with strange irregular stalks and branches protruding, form delightful spaces of light and shadow amongst the scattered tree stems, and perhaps here and there a pool of stagnant water mirrors the trees beyond the shadow and reflection of a black bank of peaty soil. Each region has its characteristic flora, and each deserves study; probably each scene is seen to greater advantage at one particular period of the year, and we should endeavour to discover it. With the actual portrayal of the flowers for their own sake the landscapist has nothing to do, but he may not miss the general effect which their presence produces. The salt marshes with their clothing of starwort blossoms or of thrift, are not the same when these flowers are absent. Some streams are annually cleared of all their reedy growth by the owners of adjacent land, a course of which the lover of the picturesque will hardly approve; the little space of moist and spongy ground in the centre of the grass field is indicated by the patch of white or pale lilac blossoms of *Cardamines*, or of hemlock, like a touch of soft white snow amidst the grass. Trees and shrubs which blossom, like apple and hawthorn, may perhaps be advisedly shunned; somehow they do not seem to lend themselves happily to photography—at least, we have very rarely seen them rendered with success.

Such a subject as the present might easily run away with a great deal more space than we have at our disposal, and we can only hope to have said enough to suggest the importance of and perhaps to have encouraged the determination to study closely and persistently the minor objects which go to compose our pictures.

And now we will ask our readers to turn attention for a little while from water-ways and rut-worn paths, from grassy levels and prolific growth of weeds and rushes, to the noblest objects upon the earth's surface—trees. Some one has insisted upon calling them the noblest and largest things on earth, pointing out that rocks and mountains are *of* the earth rather than *upon* in, and hence those vegetable forms which, by reason of their size, we commonly class as trees may justly hold a first position.

Trees are not, as a rule, easy things to manage in photography, and this arises from a variety of causes, which we will endeavour to set forth.

(To be continued.)

**Rochdale and District.**—Several of the members with their bag and baggage, etc., had a very pleasant ramble on Saturday last to Hopwood Hall and woods. This building, in some of the oldest parts, was built during the eleventh century, and other parts during the fourteenth and fifteenth. Through the kind permission of Lady Hopwood, the members were allowed to enter any part of the woods and grounds, and also in the greenhouses. Several views were taken of the Hall, from different points of vantage, and some capital bits were secured in the conservatories and woods, the cottage also coming in for a good share of attention.



## Apparatus.

### SOLTYPE.

THE Fry Manufacturing Co. of 5, Chandos Street, Charing Cross, W., have introduced a new printing-out paper, which we think is likely to find considerable use at the present time when warm tones and matt surfaces are so much in favour.

Judging from the samples which have come into our hands, the paper may be described as a very good drawing paper coated with a gelatino-chloride emulsion. It prints well and more quickly than ordinary plain sensitised paper, and there is far more vigour and detail. The directions for the paper are as follows:—

After printing to the required depth, pass the prints through a bath of clean cold water for five minutes. Keep them moving all the time. The best way to do this is to put the prints in the water one by one, and face downwards. When they are all moistened, turn them face upwards, one by one, and then again face downwards. The prints will all be separated by this method, and equally washed. If they are unequally so, toning will take place unevenly. Attention must be given to this. Three successive washings of five minutes each must be given.

It is not absolutely necessary, but it is a distinct advantage, to pass the prints through a bath containing ten per cent. of ordinary table salt (chloride of sodium). Regularity of tone is then to be relied upon. It is therefore recommended.

After the salt bath, give the prints a rinse and pass them into the toning bath. Should any of the salt bath be taken into the latter, it is not detrimental. It is recommended to tone and fix in separate baths. Use toning bath made in the following way:—

#### BORAX TONING BATH.

|                  |     |     |     |     |       |
|------------------|-----|-----|-----|-----|-------|
| Borax...         | ... | ... | ... | ... | 1 oz. |
| Hot water        | ... | ... | ... | ... | 25 "  |
| Chloride of gold | ... | ... | ... | ... | 4 gr. |

When cold, bath is ready for use.

This bath gives its best results the first time of use. It is recommended to use a fresh bath every time of toning. We believe that an acetate toning bath can be used repeatedly, but our best experience has been with the borax bath, and for that reason we recommend it.

The prints should be placed in the toning bath and kept moving. Toning will take place in from four to ten minutes, according to the depth to which the prints are toned, the temperature of the toning bath, and the amount of chloride of gold in the bath.

The colour must be judged by looking through the prints, not at them.

After the prints are toned, rinse them in a bath of clean cold water. The prints must be kept moving, or toning may go on in one part and not in another.

It is not necessary, but it is advantageous, to pass the prints straight from the toning bath into a bath of common salt and water, strength 10 per cent.

The next process is fixing. This is effected in a 10 per cent. bath of hyposulphite of soda.

#### FIXING BATH.

|                     |     |     |     |     |         |
|---------------------|-----|-----|-----|-----|---------|
| Hypsulphite of soda | ... | ... | ... | ... | 2 oz.   |
| Water to make       | ... | ... | ... | ... | 1 pint. |

This strength is necessary. It must be a weak bath, and not approaching the strength used for fixing negatives. The prints should remain in the fixing solution for fifteen minutes, and it is equally important that they should be moved in this as in the previous operations.

It is not absolutely necessary, but it is an advantage in the sense of probable permanency, to pass them through a second fixing bath of the same strength.

All processes depending upon the use of silver are permanent only if the manipulations are carefully performed, and the fixing operation is perhaps the most important of all. It is worth a little extra trouble to be sure that one's prints will retain the beauty which is theirs when first made.

After fixing, the prints must be washed, if possible, in running water, for three or four hours; if not, in many changes of water. In case a large supply of water is not available, a very good method consists in changing the baths of water frequently, between each change pressing the prints between the folds of blotting paper, so as to absorb as much moisture as possible. When placed in the next change the pores of the paper are filled up with clean water, which has a free opportunity to dissolve any hyposulphite of soda still within them. This last operation may be varied by placing the prints face downwards on a piece of glass and absorbing the water by a clean linen towel.

No instructions have been given here for fixing and toning in one

bath. Good results can be obtained by this method by almost any of the baths recommended in the photographic press, but to be sure of the best results follow out our instructions to the letter.

Prices: 1 dozen quarter-plate, 8d.; half-plate, 1s. 6d.; whole-plate, 2s. 6d.; 10 by 8, 4s. 6d.; 12 by 10, 6s. 6d.; 30 by 20, 30s.

So many of our readers find it a great trouble to obtain good matt-surface prints on gelatino-chloride paper, that they will welcome this warmly.

### FRY'S OPALS.

The above firm have also made a distinct concession to those workers who, like ourselves, have a weakness for opals, which are in our opinion one of the best means for turning out artistic decorative work for the house.

The prices of opals have hitherto been exceptionally high, but now the Fry Manufacturing Company offer them at—Quarter, 1s. 6d.; half, 3s. 6d.; whole, 8s.; 10 by 8, 6s., the two latter sizes being sold in half dozens.

With each packet of opals test pieces of bromide paper coated with the same emulsion are enclosed, thus enabling one to make trial exposures and lessening the chances of waste. The opals are coated with the same emulsion as the well-known Argento-type paper, the quality of the results to be obtained on which is so well known.

### POCKET CHANGING BAG.

Dolland and Co., of 35, Ludgate Hill, and 62, Old Broad Street, E.C., are placing upon the market a very convenient



pocket changing bag. As shown in the accompanying figure, it fastens round the head, and two sleeve holes are provided, through one of which the dark slides and plates are inserted and the aperture is then drawn up by the aid of elastic and fits tightly round the wrist, thus preventing the ingress of light. The window, which allows a safe deep ruby illumination, is composed of fabric, and an outer screen

enables one to lessen the amount of light by hooking it up at one side, as shown above. The whole weighs but a few ounces and packs into a small compass, and the price for whole-plate size is 7s. 6d.

### LINE SCREENS.

Mr. E. Gleeck, of 90, Leman Street, has shown us some very fine linatures or line screens for preparing grained negatives. They are prepared in three degrees, medium, coarse, and fine, and one similar in character to Ives well-known screens, and measure 7 by 9 inches, and cost 10s. apiece. We also saw some process blocks produced by means of the same, of very fine quality.

### POWELL'S COMPRESSED "SHUTTER" DEVELOPER.

Mr. T. H. Powell, of 116, Denmark Hill, S.E., has introduced a very convenient form of developer in the above, which works excellently for shutter exposures. The negatives have a clean steel-grey colour, and the developer proper is compressed into the tablets, and the accelerator is a dry powder in a bottle so that it is possible to obtain considerable control over development. We have given the developer a severe trial on several brands of plates, and are much pleased with the ease and simplicity of working. For tourists it will be especially handy.

### ROSS'S NEW PATENT CONCENTRIC LENS.

In 1889 Ross and Co., the well-known opticians, of New Bond Street, were granted a patent for a novel photographic lens, which was described by the patentees as "designed for use where it is desirable to obtain plain images of large fields of view which shall be sharply defined up to the margin of the plate," and it is characteristic of the jealous care with which the fame of the



firm is guarded, that no lens was issued till there was no doubt that the new glass of which it was made, and which there was some trouble in getting, was absolutely permanent. Having satisfied themselves on this point by actual exposure of lenses for the last three years, they are now issued perfect.

If any of our readers will take the trouble to refer to Clement J. Leaper's articles on "The Construction and Use of Photographic Lenses," it will be noted that all achromatic combinations of lenses have the inner or concave radius longer than the outer or convex radius. In Messrs. Ross's new lenses this is reversed, the convex and concave surfaces being portions of concentric spheres. Were such a lens attempted to be made of the optical glass used in ordinary lenses, the result would be not a positive but a negative lens, and would give a virtual instead of a real image. On the introduction of the new Jena glass in 1886, Messrs. Ross immediately recognised the possibilities of improvements in existing lens forms, and Dr. Schröder, a well-known practical and theoretical optician, author of "Die Elemente der Photographischen Optik" and innumerable papers in the "Centralzeitung für Optik und Mechanik," who is their mathematician, set to work to thoroughly investigate the problem of constructing a lens free from roundness or curvature of the field, astigmatism, distortion, coma, ghost, and flare, and after extensive calculations he was enabled to supply Messrs. Ross the necessary data of curvature, of glass, etc., from which the present concentric lens was constructed, which, when mounted, required no further improvement than a slight adjustment of the distances of the combinations.

Nearly all rectilinear lenses are constructed upon the symmetrical system, the errors in the front combination being of equal quantity but of opposite character to those of the back combination, but lenses of this type, when corrected for the central pencils, give roundness or curvature of the field, and if the lenses be separated to obtain the necessary flatness by lengthening the oblique pencils, then the defect of astigmatism is introduced. In the new concentric lens, which is actually the only really novel form of lens introduced since Professor Petzval gave his equation for producing perfect lenses in 1843, and they differ in construction from all other lenses, a perfectly flat field of uniform definition is obtained of about 75 deg., or, to put it practically, a lens of which the focus is one-third shorter than the longer base line of plate will cover that plate absolutely sharply to the corners with full aperture about  $f/16$ ; further than that, being constructed of special optical glass they are almost entirely free from secondary chromatic aberration, the achromatisation being so perfect that the images of an object formed by the different coloured rays are of actual identical size, thus enabling one to say that these lenses are more rapid than lenses of the ordinary type of equal aperture and focus, and thus, too, giving far finer definition and depth of focus. Possibly many of our readers know that whilst a lens may be corrected so that the visual and chemical rays may lie on the same plane, it does not necessarily follow that the coloured images are of the same size, and that therefore when a negative is taken by aid of these lenses, and enlarged or highly magnified, the image soon loses in sharpness and detail. In the concentric lens this chromatic correction is perfect.

A visit to Messrs. Ross' factory, pleasantly situated opposite the old church on Clapham Common, for the purpose of testing and examining the new lens under the most trying conditions, viz., on the optician's "horse," against such well-known lenses as this firm's Portable, Universal, Wide-angle, and Rapid Symmetrical lenses, convinced us that in introducing this lens they have placed a very valuable instrument before photographers. Taking a practical trial of an  $8\frac{1}{2}$  in. lens, we found this would cover a half and whole-plate so perfectly as to need no stopping down at all, and that the same lens, when tested on a 10 by 8, was far superior to any lens tried against it, and that the claim made for the lens, that it would "give uniformly perfect definition over an absolutely flat field of a circle of about 75 deg.," and that it is "absolutely free from astigmatism, distortion, coma, ghost, and flare," was faithfully borne out by the test. We have also tested the lens against some of the finest picked lenses of the Continental opticians, and have to congratulate the makers on having turned out such a perfect instrument.

One of these new lenses will be at our offices for the next fortnight, and we shall be pleased to show the same to any visitor and allow him to test the same on the camera for himself. To the

lantern slide maker, or hand-camera man, who desires to enlarge his snap shots to 12 by 10 or even more, we venture to think that this lens will be of enormous value. The largest aperture, it is true, is only  $f/16$ , but as with this it covers the plate absolutely sharply, it will be found to give very fine results, and speaking from personal experience, we have found that  $f/16$  is about the largest useful aperture that can be used with any hand-camera where good definition and good pictures are required. To the "snap-shottist," who wants a shutter to work at about the thousandth of a second, this lens will, he is certain to say, be utterly useless, but then he wants a lens working with a larger aperture than its focal length, and at the same time expects to get good definition, depth of focus, and flatness of field. To the landscape and practical picture maker this lens puts a new power in his hands, a perfect rectilinear and a perfect landscape lens in one which will work at full aperture.

Ross and Co. have been appointed sole manufacturing licencees for the British empire for the Zeiss Anastigmats, and given the formula of such distinguished mathematicians as Drs. Abbé and Rudolph and the long experience and perfection of workmanship, and finish of Messrs. Ross, we may be quite sure that these lenses will be issued as perfect as it is possible to make them.

## Societies' Meetings.

**Ashton-under-Lyne.**—This Society commenced their summer rambles on Saturday last, April 23rd, the place selected being Park Bridge to Daisy Nook. Although the weather was unfavourable, a very strong wind blowing, twenty-eight members put in appearance, including three ladies. The party under the leadership of Mr. Matthews, journeyed to Park Bridge by train, and from there walked to Daisy Nook along the banks of the river. Members are reminded that every Thursday evening is set apart for conversation on matters relating to photography.

**Bedford.**—Annual meeting on the 12th inst., Dr. A. H. Beaman in the chair. The Secretary read the report of the Committee for the past year, and a statement of the income and expenditure of the club was submitted and adopted. Regret was expressed at the retirement of Dr. Beaman as President, and Mr. A. Kirby as Hon. Secretary. Both gentlemen were prevailed upon to retain their seats on the Committee. The officers and Committee for the ensuing year were then elected:—President, Rev. H. V. Macdonald; Committee, Dr. Beaman, Messrs. H. W. Stewardson, W. E. Ison, and Alex. Kirby; Hon. Secretary, Mr. P. Hill.

**Brechin.**—The usual monthly meeting was held on 20th inst., Mr. H. Braid, Vice-President, in the chair. The Secretary (Mr. J. D. Ross) was appointed delegate to the Photographic Convention meeting in Edinburgh during week beginning 11th July. A letter was read from Mr. W. T. Stead on the National Society of Lanternists, and a number of those present agreed to become members. Mr. J. Mackie, jun., and Messrs. Day and Maw (Forfar and Brechin Railway) were balloted for and admitted members. Set No. 2 of the American Lantern Slide Exchange were then exhibited, and evoked on the whole very favourable criticism. The Secretary reminded the members of the desirability of having the set of slides illustrative of linen manufacture ready early in the autumn. Provost Vallentine thought that, in view of the establishment of technical schools throughout the country, slides illustrating such subjects would be very useful. Mr. J. H. Lamb concurred, and it was agreed that as soon as the slides were ready, and before a lecture was written to accompany them, they should be exhibited at a meeting to which all interested should be invited.

**Brixton and Clapham.**—An ordinary meeting was held on 21st inst., Mr. James W. Coade, Vice-President, in the chair. The subject for the evening was "Carbon Printing" and the Autotype Co. had kindly sent two representatives to explain the process. This they did in a most complete manner, demonstrating both the single and double transfer method, also showing its adaptability for lantern slides and opals. The lecture was listened to throughout with great attention, more especially as several of the members had recently taken the matter up. The Assistant Secretary passed round a sample of waterproof focussing cloth, sent for inspection by the London Rubber Co., which appeared to be very suitable for the purpose.

**Camera Club.**—On the 21st inst., Mr. A. Stroh in the chair, Mr. Pringle exhibited a series of lantern slides illustrating travels in Spain, including a set of pictures taken at a Spanish bull fight, and some fine interiors and architectural subjects at Seville, Bruges, and elsewhere. Mr. Pringle gave an interesting description of the slides as the exhibition proceeded. Later on other slides were shown by Messrs. Arent, Ferren, and Leventhorpe.

**Derby.**—The usual monthly meeting was held on the 19th inst. Mr. R. Keene presided. The minutes of the previous meeting having



been confirmed, Mr. A. C. Riley was called to give a lecture, entitled "The Production of Copper Plates by Photography." This gentleman, in a very simple manner, described the process dating from the time of Fox Talbot to the present day, showing as he proceeded, copper plates in various stages of being produced. The lecture throughout was full of interest, and the members very much enjoyed it. Mr. W. Morris, St. James's Street, was elected a member. Mr. Keene showed several prints by the new kallotype process, and a number of platinotypes were also shown by Mr. T. Scotton, which had been developed by a new method with excellent results. A library was started a short time ago, with which the members are well pleased, several of them making use of it.

**Eastbourne.**—At the ordinary meeting, between twenty and thirty members present, nine new members were duly proposed. Rev. — Whittam having accepted the mastership of the Isle of Wight College, was reluctantly compelled to resign his presidency. The Rev. H. G. Jameson was unanimously elected to fill the vacant post. Mr. Whittam kindly offered the sum of £2 2s. to form a prize for competition amongst the members during the ensuing season. Several hand-cameras, kindly lent by the various makers, amongst others the London Stereoscopic Company, Goy's, of Lime Street, E.C., were conspicuous. The palm was undoubtedly carried off by the Twin Lens Artist shown by the London Stereoscopic Company. A hearty vote of thanks was given to Mr. Whittam for his present to the Society.

**Faversham.**—The annual meeting of the members was held 19th inst., when Captain Hooper presided over a small attendance. The Hon. Secretary, Mr. P. Dan, read the second annual report, which showed that there were twenty-nine members against twenty-five the previous year. The financial statement showed a balance in hand of 2s. 4d. against 7s. 8d. deficit at the start of the year. The report and balance-sheet were adopted, and the certificates and some of the special prizes gained at the recent competitions were presented. The recommendation of the Committee that the next competition and lantern exhibition be held in the early autumn was discussed, with the result that it was decided to alter the date of the lantern exhibition till the autumn, the competition to take place as usual in the spring. The question of providing a "champion" class for winners of first prizes, whom it was proposed to exclude from the ordinary classes for a period, was considered and referred to the Committee. Viscount Throwley was re-elected President, and Captain Hooper, Dr. Evers, and Mr. W. C. Stunt, Vice-Presidents. Messrs. C. Cremer, F. Crosoer, A. N. Filmer, F. C. Jackman, M. Laxon, and C. Semark were re-appointed as the Committee. Mr. P. Dan declined to accept the secretaryship again, owing to the lack of time to devote to the work, and Mr. C. Semark consented to undertake the duties. Mr. Dan was heartily thanked for his past services, and placed on the Committee in the room of Mr. Semark.

**Glasgow and West of Scotland.**—The closing meeting of the session was held on 18th inst., Mr. Thomas Taylor, President, in the chair. There was a large attendance of members. A paper was read by Mr. Wm. Goodwin, Hon. Sec.; subject, "Orthochromatic Photography." Mr. Goodwin's remarks were listened to with great interest. A few novelties useful to photographers were exhibited. The usual show of lantern slides followed, when a large number of beautifully executed photographic views were thrown on the screen.

**Huddersfield.**—On the 21st inst. the above Society held a lantern evening at the Y.M.C.A., King Street, Mr. A. Clarke in the chair, when the California Camera Club slides, illustrating the Yosemite Valley, were thrown upon the screen, and the accompanying lecture read to a delighted audience.

**Ireland.**—A special meeting was held on 22nd inst., when what was probably the most interesting paper of the season was read by Mr. Jas. Carson, a member of the Lantern Committee, and generally admitted to be one of the ablest lanternists of the present day. The title of his lecture was "Experiments with the Optical Lantern," and in opening the lecture he stated that his primary object in bringing it before the Society was to place the lantern on its right basis as a scientific instrument. He entirely discountenanced the use of the term "magic" lantern. He did not propose to enter on a lecture on light, but rather to point out a few lines of experiment which the members might most easily take up. He then showed the spectrum and its phenomena, demonstrating that by bringing the various colours to the same point, white light is again the result, while by subtracting one or more colour, the result is colour. Having shown the formation of a line spectrum and the production of Fraunhofer's lines in a continuous spectrum, also some phenomena of interference, such as Newton's rings, etc., Mr. Carson showed a number of beautiful experiments with polarised light, including the phenomena of unannealed glass, compressed glass, selenite, etc., etc., behaviour of quartz plates in parallel light, passing then to the production of the rings and brushes in uniaxial and biaxial crystals, and closed an intensely interesting paper by showing the blue colour produced by small particles in a jar of water, illustrating the production of the blue colour of the sky.

**Kensington and Bayswater.**—A meeting was held on the 25th inst. There were present Mr. J. E. Hodd, in the chair, and twenty-six other gentlemen. Mr. J. Howson gave a most interesting paper on the "Ilford Gelatine Printing-out Paper and Isochromatic Plates." His demonstration was accompanied by the handing round of specimen prints, showing the difference of results obtained by variety in manipulation. He stated that gelatine printing-out paper was first invented in 1885, and prints exist which were prepared in that year, and showed no signs of fading or discoloration. The advantages claimed for the Ilford printing-out paper are its permanency, good printing qualities, its price, its convenience in cutting, and the absence of water-mark edges. Mr. Howson stated that the toning bath should never be warmed, as the effect of a bath much above 150 deg. F. would be to cause a yellowness in the finished print. The effect of insufficient washing previous to toning is to spoil the toning bath and affect the permanency of the prints. If burnishing is desired, the alum bath should be used. Mr. Howson next pointed out very clearly the difference between isochromatic and ordinary dry plates, and the advantages possessed by the former over the latter, as in the case of photographing flowers and trees. The plates are assisted in their isochromatism by the use of a yellow screen placed inside the camera immediately behind the lens. The emulsion of these plates differs from that of ordinary plates, in that it contains eoside of silver, a chemical which is extremely sensitive to yellow rays. Mr. Frogbrook was elected Chairman for the ensuing meeting.

**Leeds Y.M.C.A.**—The inaugural meeting of the summer session was held on the 9th inst., the subject for discussion being new developers. Several plates were developed by various members with their favourite formula, etc., the most interesting being the new German developer Rodinal, introduced by Mr. J. A. Noble. After a prolonged and interesting discussion, the majority of the members seemed in favour of hydroquinone. A very pleasant evening was brought to a close by the introduction of several new members.

**Leytonstone.**—On the 20th inst., Dr. Pickett Turner in the chair, Mr. Tom Symmons, artist and engraver, delivered a very able lecture upon "The Position of Photography in Relation to Book and Periodical Illustration," accompanying his remarks with lantern slides and numerous actual examples. He dealt only with methods of illustration which were printed type high. In his opinion, for line work, photographic process was distinctly the best, but for half-tone subjects, wood was in many cases to be preferred to zinc. Messrs. Wire, Summers, Newton, Weedon, and others took part in the ensuing discussion.

**Midland Camera Club.**—General meeting, 22nd inst., Rev. J. Henry, F.R.G.S., Vice-President, in the chair. Being a members' lantern night, there was a fair gathering of friends and visitors, including many ladies. Slides were shown by the following members:—Mrs. Welford, Dr. Maberly, Jevons Fowler, Wm. Bentley, Rev. J. Henry, G. Warren, T. J. Perry, and W. D. Welford. Slides by John Carpenter (floral studies) and P. H. Fincham (Italian views) were also shown.

**North Kent.**—A meeting was held on the 19th inst., together with a meeting of the Gravesend and Milton Literary and Debating Society, Dr. Jeserich's paper on "Photography Applied to the Detection of Crime," lent by the Photographic Society of Great Britain, being read by the Secretary. An exhibition of lantern slides lent by the members followed.

**North Middlesex.**—On 25th inst., Mr. W. B. Goodwin in the chair, a technical evening was held, when two gentlemen were nominated for election as members. Negatives made upon Imperial plates (samples of which had been distributed among the members at a previous meeting) were passed round for inspection, the consensus of opinion of those who had tried them being that they were good in quality and at least as rapid as most ordinary plates. Mr. Gill then developed some plates which had been exposed by some of the younger students, explaining his methods as he proceeded. A number of questions on technical points were asked and answered, and Messrs. Warne and Gill passed round hand-cameras of novel construction, and explained the methods of working them. Some curious and beautiful prints were shown, and a method of mounting prints to secure them from the effects of damp was explained by Mr. Cox. The first field day of the season having been held on Easter Monday, at West Drayton, when nine members attended, prints from the negatives taken on that occasion were entered for competition. The vote of merit was secured by Mr. H. Smith, for his print entitled "Steady," in which an angler who had been fly-fishing was anxiously directing his assistant to secure the catch. Mr. Smith then reported that eighteen members and friends had attended the field-day on Saturday the 23rd inst. to Edgware and Stanmore. The next meeting of the Society will be held on Monday, May 9th, when the last exhibition of members' slides during the season will be given. Ladies and visitors generally will be welcome.

**South London.**—Ordinary meeting, 20th inst. Demonstration of the new cold-bath platinum process by Mr. F. W. Edwards, the



President. The paper was first brought before the Camera Club Conference a week or two ago, and had not since been demonstrated at any society, and was not yet purchasable by photographers. It differed from the old cold-bath process, inasmuch as the platinum is used in the preparation of the paper, and not added to the developing bath. The troubles arising from evaporation of the developer and the destruction of the dishes in the hot-bath process were done away with by the use of the new paper, as also were the difficulties caused by bubbles and streaks, Mr. Edwards stating that he considered it to be "the printing process of the future." Results could be got from thin negatives which it would be simply impossible to do with the older method. The deposit of platinum is very much finer, and there is also a freedom from granulation. Velvety shadows are obtained with very pure whites. A portion of the print can be developed at a time without showing any line or marking, thus doing away with the necessity of using large dishes. By using the bath colder, over-printed pictures can be brought up, and under-printed ones by using it warmer. It is impossible to over-develop a properly printed picture. Prints are made until a faintly printed image is obtained on the paper, when they are developed in a bath of oxalate of potash (1 lb. in 60 oz. of water). After development they are treated with three baths of hydrochloric acid, 1 in 60, to remove the yellowness, and afterwards washed to get rid of all traces of the acid. The President, after demonstrating the working of the process, offered the prints for sale for the benefit of the funds of the society, when upwards of £3 was realised. The excursions to Canterbury on Easter Monday and Dulwich Village (23rd April) were very successful, and many good negatives obtained.

**Southsea.**—The first excursion took place on the 19th inst., the venue being Netley Abbey. Favoured by unexceptional weather and with the advantage of capital light, a most enjoyable day was spent. The usual monthly informal meeting was held on the following evening. Messrs. Shew and Co. had kindly sent for inspection some of their latest hand-cameras and other novelties, the merits of which were fully discussed. The ingenuity of the "1891 Shutter" introduced by this firm, particularly as regards its time arrangement, was much admired. Major Bruno subsequently showed and described a hand-camera constructed by himself upon the lines detailed in the AMATEUR PHOTOGRAPHER of the 15th inst. The opinion of the members present was that the novel features introduced, rendering it suitable for every description of work, placed it in advance of any instrument they had hitherto inspected. Several new members have recently been admitted, and it is hoped that a series of excursions will be organised for the ensuing season. Visitors to Southsea and the neighbourhood are admitted as temporary members of this Society, and have the advantage of a commodious dark-room, with enlarging apparatus, etc., at 3, King's Road.

**Sutton.**—An exhibition of lantern views, made and contributed by members, was given on the 30th ult. The thirty-seventh meeting was held on the 6th inst. at the Society's rooms, Mr. De Clifford in the chair. After reading the minutes, the winter competition prints were exhibited and judged, the award being made to Mr. Goode, who scored 248 marks, the second best competitor, Mr. De Clifford, scoring 218. Mr. McCance kindly consented to procure the prize for the above competition. Mr. Baker showed some highly interesting prints from negatives recently taken in Venice and other continental localities. An excursion to Leatherhead and Mickleham was arranged for Saturday, the 16th inst. The photographic year having expired, a vote of thanks to the Chairman and recorder was proposed, seconded, and duly acknowledged. Proposed by Mr. Youngman, and seconded by Mr. Goode, that the present officers be re-elected. Subjects for the ensuing summer competition were discussed and fixed, twelve prints to be the maximum number, to be sent in on or before November next. A monthly competition—a landscape—was arranged. This carries no prize.

**West Surrey.**—The first meeting at the new head-quarters was held on the 20th inst., when Mr. Calland demonstrated the process of toning silver prints with platinum. Mr. Calland said that the best results could hardly be expected unless one prepared one's own printing paper. Nearly all papers require sizing, excepting those of very tough and hard texture. The paper is conveniently salted and sized at the same time. Sodium, barium, and ammonium chloride may be used with much the same results. Using the sodium chloride the proportions may vary from 120 to 160 grains per pint of solution, corresponding variations of 30 to 60 grains of silver nitrate per ounce being made in the sensitising solution. Here lies one advantage of home manufacture—strongly salted and sensitised paper for weak negatives, vice versa for vigorous ones. The procedure I take for toning with  $K_2PtCl_4$  (chloro-platinite of potash) is identical at nearly all points with Mr. Lyonel Clarke's method. Mr. Calland successfully toned several prints, and also showed his method of salting and sensitising the paper, after which a heated discussion took place. Messrs. Adams and Co. lent for exhibition one of their Torsioscopes, a revolving vice for use in binding lantern slides, and their Pantoscope for examining lantern slides in an effective manner.

## SOCIETIES' FIXTURES.

- April 28.—HACKNEY.—Lantern night and auction.  
 „ 28.—LONDON AND PROVINCIAL.—“Platinotype.”  
 „ 29.—HOLBORN.—Lecture and demonstration on “Process Work,” by R. Laxton.  
 „ 29.—RICHMOND.—“Developing,” by F. P. Cembrano.  
 „ 29.—BRISTOL.  
 „ 29.—WEST LONDON.—Technical social meeting.  
 „ 30.—FAIRFIELD.—Excursion.  
 May 3.—BRISTON.—“Photo-Micrography,” by Charters White.  
 „ 4.—PHOTOGRAPHIC CLUB.—“Hand-Cameras.”  
 „ 4.—ISLE OF THANET.  
 „ 6.—CROYDON.  
 „ 6.—WEST LONDON.—Technical social meeting.  
 „ 7.—SOUTH LONDON PHOTOGRAPHIC SOCIETY.—Excursion to Greenwich.

On Monday, May 2nd, the last social evening and smoking concert of the season will be held at the Camera Club; and on Thursday, May 5th, slides of scenes on the Norfolk Broads will be shown by several members, the description being given by Mr. E. J. Humphery. Other slides will follow.

**Photographers** one and all agree that in nine cases out of ten the left side of the face is by far the best looking. This is the reason that in almost all photographs the left side of the face is shown. On the right side is stamped indelibly the real strength and character. The lines are bold and harsh, with every defect delineated. On the left side everything is softened down, and the face is at its best. Whenever you suspect a man of trickery or deceit, stand on his right and watch his expression closely. He cannot conceal the marks of his real personality, which are stamped by nature on the right side of the face.

**North Wales Amateurs.**—On Monday, the 18th inst., a large muster of Llandudnoites and visitors assembled to witness the exhibition of a quantity of magnificent lantern slides lent by the editor of a contemporary and local slide makers; they were shown by the splendid fifty-guinea Beard's oxy-hydrogen lantern, recently purchased by our popular townsman and enthusiastic amateur, Mr. Hughes, of Rochester House; this perfect machine gives a brilliant and perfectly sharp image 25 ft. in diameter, and is one of the finest lanterns in the kingdom. The slides were ably described by Mr. W. A. Whiston, the genial Principal of the Llandudno Collegiate School, himself a most capable amateur, having commenced in the old wet collodion days, and being now as keen, or if anything keener than ever. Some of the views and seascapes were the work of Mr. A. R. Dresser, the mention of whose name elicited loud and prolonged applause; the names of Messrs. Gibson, of Hexham, and Lyd. Sawyer, of Newcastle, were also well received, as was each of the works by all three gentlemen. Some twenty slides of local views were also lent by our premier professional photographer, Mr. I. Slater, of Mostyn Street, Llandudno, which stamped him as being as successful at landscape work as he is in portraiture, his work in each branch being undoubtedly unequalled by any worker, either professional or amateur, in North Wales; one view of Gloddaeth Hall is very fine indeed, and in order to obtain it Lady Mostyn had a lofty stage erected, under Mr. Slater's direction, for him and his camera. Surely this is a hint to other patrons not to begrudge a few pounds when the expenditure will add to the beauty of the resulting picture. The above mentioned incident took place during the visit of the Queen of Roumania to Llandudno eighteen months ago. Surely there can be no happier hunting ground for camera men than lovely North Wales, where at each turn one takes a totally different but uniformly beautiful picture is presented, well worthy of a plate. The two dark-rooms at the North Wales Club-rooms, 44, Mostyn Street, Llandudno, which are available for the use of visiting amateurs, have been extensively patronised during the Easter holidays by “shottists” (to coin a new word) from all parts of the country (and towns), all of whom spoke of the innovation as a great boon; a reading-room and billiard room with two tables are on the premises, so that while the plates are fixing or washing their producers can fight out a game with cues, and thus help to pass the time. The dark-room lamps were a specially large size, made by Messrs. Lancaster and Son, and the rooms are complete with sinks, rose taps, trays; and fixing solution—the latter in two enormous, deep porcelain baths—plates, developers, pyro, and hydrokinone, each in two solutions, are supplied by the Society, as are also pure chemicals. Apropos of the scenery in this district, we met a cameraist the other day with his arm in a sling, and learnt the cause was from having so incessantly “pressed the button,” he was thus compelled to “do a rest.”—Communicated.



**Bolton.**—A very successful commencement of the season was made on Good Friday, when some fifteen members (ten with cameras) journeyed to Miller's Dale, leaving Bolton by the Nottingham excursion, which, through the courtesy of the Midland Railway, stopped at Miller's Dale station, both going and returning. The "Angler's Rest" was made head-quarters for the day, and after breakfast the party made their way through the valley under the leadership of Mr. W. Banks; returning late in the afternoon, when a further expedition was made to Tideswell, and then back to tea. After this necessary meal, a smoking concert was got up, which, with the assistance of the host, made the time fly most agreeably, and the meeting was voted by those present one of the most pleasant the society has held. It was arranged that results shall be exhibited at the rooms on Tuesday, April 26th.

**"Life and Work of Mr. H. P. Robinson."**—On the 13th inst. Mr. C. W. Hastings, of Sidcup, delivered a lecture on this subject, illustrating it by lantern slides, at the Sussex Assembly Rooms. Mr. G. Smart presided, and there was a large attendance. During the evening, a string band under the direction of Mr. Pierson gave several selections. Mr. Robinson, said the lecturer, has held a prominent position in art, and more especially in reference to the application of art to photography, for more than thirty years. I shall show you to-night pictures that have been composed and

photographed in his camera which will hold their own by many of the pictures of present-day artists. Mr. Robinson has been looked upon as the foremost worker and greatest teacher photography had yet had. Although to-day the number of workers in photography may be counted by tens of thousands, no one has yet come forwards to usurp Mr. Robinson's right to be considered *facile princeps* the teacher upon photography in this kingdom and every other. Many a photographer is popular in his own town; others become known by reason of the exhibition of their photographic work, or possibly by means of their pen, to a wider field; but Mr. Robinson's reputation has spread over the whole world. This popularity has been obtained by hard work and honesty, both as a business man and as a writer upon photographic amateurs.

**The Rochdale Photographic Society** have closed their rooms in Bury Street, Rochdale, and all correspondence must be addressed to W. and S. Ingham, Freehold Street, Rochdale. In future the meetings will be held in one of the local hotels.

With the object of avoiding the difficulty experienced in photography of obtaining a distinct foreground and background at the same time, M. Damoiseau fits his camera with two shutters, one for the foreground and the other for the background, giving that for the former a greater and variable degree of opening, which amounts to giving the foreground a longer exposure than the background.

## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by TUESDAY MORNING'S POST.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance the number and full title of the query referred to.

### QUERIES.

5602. **Printing Illustrations.**—Can any one inform me of a good hook on making electrotypes by means of the photographic negative, for newspaper work? How are the pictures produced in the daily papers?—J. P.

5643. **Hand-Camera.**—Will anyone kindly tell me what hand-camera they advise me to get for taking horses instantaneously? I want to be able to take horses trotting, etc., and want an instantaneous hand-camera, not an expensive one, but one solely for doing animals. Has anyone used Shew's guinea one?—THORNGATE.

5644. **Yellow Stains.**—Can any reader tell me the best way to remove or prevent the yellow tint given to negatives by pyro and ammonia development? I have tried several, but have succeeded with none.—AMATEUR.

5645. **Backgrounds.**—Will any reader kindly inform me what are the quantities, ingredients, etc., used to paint backgrounds?—ARTIST.

5646. **Exposure, etc.**—Wishing to take a negative of a locomotive engine stationary, will some one kindly give me probable exposure, say with  $f/16$  in sunlight, and also say whether there are any dodges as to same to prevent reflections from bright work; would it be better in the sun or in shade?—M. H.

5647. **P. O. P. Toning.**—How many sheets of this paper is the bath containing  $2\frac{1}{2}$  gr. gold capable of toning?—M. H.

5648. **Wet Process.**—Could anyone inform me where I could get a good book of the wet collodion process for a beginner?—J. SEWELL.

5649. **Washing Prints.**—Would any of your readers give me the most simple and best way of washing silver prints, and how long they require to be kept in the water? I usually use two earthenware bowls and change the water often, every few minutes for half an hour, then every quarter of an hour for about four hours. Be as careful as I can, I often manage to get them torn or bruised. Any information will be very thankfully received. Should like to convey my grateful thanks to U. B. Smart, J. G. P. Vereker, Y. H. Senog, who so kindly gave me useful instructions for lamp.—TRIX.

5650. **Pinholes.**—Can anyone tell me the best way of stopping out pinholes in negatives? I dust the slides and plates most carefully, but cannot avoid getting them. I use Ilford plates.—MANFELD.

5651. **Walking Tour.**—Cologne (Cathedral), Nuremberg, Munich, Vienna, Salzburg, Innsbruck, etc. Shall be visiting these next month. Are there any restrictions on photographing in the above towns, or am I likely to be interfered with in any way?—IRIS.

5652. **Lake District.**—Will any brother amateur kindly give me information about the above as to best places to photograph, and could anyone recommend me any cheap hotel, inn, or boarding house, and about what charge in June?—ANXIOUS.

5653. **Studio.**—Will any reader kindly give me particulars how to build a portable studio cheap? Also which way would it be best to place it so as to get best light?—ROLYAT.

5654. **Mounting.**—Can any reader inform me which is the best way to mount Aristotype prints without injuring the glossy surface of same?—ROLYAT.

5655. **Toning.**—I will feel obliged if some one will kindly tell me how to retain the purple tone of Aristotype prints which I get in an ordinary horax bath? I lose the tone directly they are placed in fixing bath.—ROLYAT.

5656. **Ratio Aperture.**—Will some brother amateur inform me what is the value of stop in a French doublet lens which measures in aperture 5-16th of an inch, 5 in. from stop to ground-glass, and 3 $\frac{1}{2}$  in. from back combination to ground-glass? This information will oblige.—PERPLEXED.

5657. **Plates.**—Can anyone kindly give me information as to the plates obtainable in Tasmania? Also the best kind to take for the voyage out there, both for ordinary work and snap-shots?—TASMANIA.

5658. **Hand-Camera.**—Would some one kindly tell me whether the finder fitted to Talbot and Eamer's Arcanum hand-camera is fit for vertical or horizontal pictures, and has it a strap for carrying? Could I get a better hand-camera for the money?—E. M. W.

5659. **Prints Curling.**—Would some one kindly tell me how to keep unmounted prints flat? Mine always curl, even when pressed in a book; they curl up when the book is opened. Also how to keep photographs mounted on cards from curving when dry?—ÆSOP.

### QUERIES UNANSWERED.

- April 1.—Nos. 5555, 5568, 5570, 5574, 5577, 5578.  
 „ 8.—Nos. 5588, 5593, 5603, 5605, 5607, 5621.  
 „ 15.—Nos. 5625, 5628, 5629.  
 „ 22.—Nos. 5636, 5641.

### ANSWERS.

5580. **Kodak.**—This is a beautifully made instrument, and after three months use of it whilst travelling on the Continent I am thoroughly satisfied.—B. S.

5581. **Roller Films.**—Roller films are rather awkward to develop, as they curl up when wet, and the films sometimes have peculiar markings on them. They are also easily damaged, but with care answer just as well as plates.—M.

5581. **Roller Films.**—The roller films answer perfectly in my hands, and develop as easily as plates.—B. S.

5584. **Printing.**—Probably the different colours of the image and gelatine film are the principal factors in determining the rate of printing and colour of image. It is impossible to answer definitely. Why not write to the Editor and send him some negatives?—O. L. M.

5584. **Printing.**—A plucky negative, with a good

colour, always prints a darker tone than a flat or thin one. If you print the negatives that give a poor, reddish tone, under green glass, or in a weak light you may get better results.—M.

5585. **Films.**—Films require exactly the same treatment as plates, and are quite as convenient, especially if you get good thick ones such as Fitch's. They may be used in an ordinary dark slide, either by putting a piece of stout pasteboard behind them, or by using film carriers.—M.

5586. **Lens.**—You do not say what you require your lens for. If for landscape, the lens you mention would do very well, but if you want it for architecture, you must have a wide-angle rectilinear, which will cost about £2 to £3. Lancaster makes a wide-angle rectigraph, 5 in. focus, half-plate, working at  $f/10$ , iris diaphragm, for £2 2s., which is a very good lens. Clement and Gilmer, of Paris, make one working at  $f/16$  for £1 6s.—M.

5587. **Developer.**—I have found that eikonogen or Rodinal gives me better results than pyro for instantaneous work, though sometimes I follow these up with pyro to gain density. In the developer given I should decrease the bromide, or rather use the developer at first without bromide, and then add it as soon as all detail was out.—O. L. M.

5590. **Painting Enlargements.**—Bromide enlargements can be painted over with oils without any preparation.—M.

5591. **Glass Cutter.**—At any ironmonger's.—M.

5596. **Dark Slides.**—Put a plate in the slide, leave it in the sun, and develop. If no signs of fog are seen, probably the slide does not fit the camera tightly.—M.

5597. **Lantern Slides.**—I should say about 24 in. would not be too much for Alpha plates.—O. L. M.

5609. **Changing Bag.**—One thickness of best Italian cloth lined with deep red fabric would be safe, but not the Italian cloth alone.—O. L. M.

5610. **Film Slides.**—Mawson and Swan have a neat little slide for films. Address—33, Soho Square, W.—O. L. M.

5610. **Film Slides.**—Turnbull, of 6, Rose Street, Edinburgh, makes film slides, which are very light and compact, being only  $\frac{3}{8}$  in. thick. The shutters draw right out. The price is, quarter-plate, 5s. 6d.; half-plate, 8s.—M.

5612. **Hand-Camera.**—There is Mercer's Viator, which is £3 3s., with a view lens; Lancaster's Rover, £3 3s.; Underwood's Automat, £1 16s.; and Cusworth's Repeater, £3 3s.—M.

5613. **Flash Work.**—I have found the Mawson plate give me first-rate results, and they develop as easily as Thomas's.—G. W.

5613. **Flash Work.**—Thomas's extra rapid plates are very good for flash-light work, or you might try their cyclist plates, which are double the rapidity of the above, and develop more slowly.—M.

5623. **Opalines.**—Try white of egg.—M.

5624. **Griffiths Hand Camera.**—I have done pretty fair work with this camera. It has a very fair shutter. Lancaster's Omnigraph is the better made of the two, but is not so convenient in use.—M.

5626. **Density.**—Ilford plates should be developed until the high lights are very pronounced on the back of the film.—CYANIN.

5626. **Density.**—Don't judge the density by the back of the film, but by looking through the plate. Develop until the high lights are opaque, and all the detail is out in the shadows.—M.

5627. **Day Light Enlarging.**—Any window into which the sun is not shining at the time.—M.

5627. **Day Light Enlarging.**—Any window is suitable, provided there is a plentiful supply of good light.—CYANIN.

5631. **Clouds and Skies.**—You do not make it clear whether you want to take the sky, or the landscape, or both, and you give no particulars as to stop, plate, weather, and time of year. See an exposure table.—M.



5532. **Enlarging.**—Make a carrier to hold your negative, put it in the stage, set up a drawing-board covered with white paper about 3 ft. away from the lantern, and focus, just as with a slide, until you get it the right size, and sharp, then pin the bromide paper on the board, and expose. You can only enlarge a small part of the negative with a 4-in. condenser.—M.

5532. **Enlarging.**—I have a small magic lantern, costing 5s. 6d. I have done some very fair enlargements with it. I enlarged with quarter-plates only. I used the screen that I have for the lantern. Put in the negative focus, then cap your lenses, pin on your paper, then expose. Exposures with one-wicked lamp depends greatly upon the negative; very dense negative, about 12 minutes, and thin, 8 minutes, developing with the developer that Eastman's bromide recommends.—J. R. HUGHES.

5532. **Enlarging.**—Ordinary lanterns possessing 4 in. condensers are quite useless, as to illuminate a quarter-plate negative properly a 5 in. condenser is required; a half-plate, 7 or 8 in., a whole-plate, 10 in.—INQUISITIVE.

5533. **Hand-Camera.**—It has not yet come to my knowledge that such a camera as that one advocated by "Photo Captain" is to be purchased. Fallowfield's Facile is well known, but does not produce negatives direct as lantern slides. You first obtain your negative and make a lantern-slide afterwards.—CYANIN.

5534. **Outdoor Work.**—The process you mention is the ferrotype process, which is a modification of the wet-plate process. The plates are made of ferrotype, which is thin sheet iron, coated with collodion, and sensitised.—M.

5534. **Outdoor Work.**—It is a collodion positive. This form of picture is called in America an ambrotype, and if on enamelled iron is called a ferrotype.—INQUISITIVE.

5534. **Outdoor Work.**—Ferrotype plates are coated, on the enamelled side, with positive collodion. When collodion has set, plate is immersed (in the dark-room) in

|                                |              |
|--------------------------------|--------------|
| Distilled water .. ..          | 10 oz.       |
| Nitrate of silver (recrys.) .. | 1 oz. avoiz. |
| Nitric acid .. ..              | 1 minim.     |

This sensitising bath should previously have been iodised by leaving a collodionised plate in the solution for three hours. The plate to be sensitised is left in the silver bath until all greasiness has disappeared, the time varying from 3 to 6 minutes. It must be exposed while wet, and will require a much longer exposure than a gelatine dry plate. Developer consists of—

|                               |        |
|-------------------------------|--------|
| Potassium sulphate of iron .. | 14 oz. |
| Acetic acid .. ..             | 1 "    |
| Alcohol .. ..                 | 1 "    |
| Water .. ..                   | 20 "   |

which must be poured on an off rapidly, care being taken to cover it in one sweep, or uneven markings will result. Wash and immerse in—

|                            |         |
|----------------------------|---------|
| Cyanide of potassium .. .. | 2 drms. |
| Water .. ..                | 8 oz.   |

(This is a deadly poison). Wash, and dry.—H. R. II.

5535. **Photomnibus.**—This is a genuine half-crown's worth. I have taken good negatives with it. I had mine from Mr. Wormald, Sutton, Surrey, by parcel post.—E. MOXHAM.

5535. **Photomnibus.**—This camera will take first-class negatives, and is thoroughly well made. It is sold by most dealers. The price is 2s. 6d.—A. R.

5535. **Photomnibus.**—I should advise you to give these cheap cameras a wide berth.—CYANIN.

5535. **Photomnibus.**—I have taken many excellent photographs with Wormald's half-crown Photomnibus. I obtained it at Fallowfield's, Charing Cross Road, and I believe Wood, Cheapside, keeps it also.—CHEMIS.

5537. **Toning.**—The following toning bath is very strong; good tones of purple-black are certain. Dissolve 20 gr. of phosphate of soda in 6 oz. of water, and add an ounce of solution of chloride of gold (an ounce of water to which a grain of gold has been dissolved to each drachm). This bath is tremendously strong, and you must take care to keep the prints moving. The purple tone will soon disappear; mind it does not go too far, or they get to a grey shade. The bath will not keep, and must be used directly after mixing. To keep the tones during fixing, add sufficient liquor ammonia or carbonate of ammonia to make fixing bath smell faintly of ammonia.—INQUISITIVE.

5538. **Plates.**—Personally I should use Ilford white label.—CYANIN.

5539. **Light.**—With two windows, one over-head and one at the side I should look upon as being the most suitable combination. I should so arrange the sitters as to be able to reflect light by means of a white screen on to the side of the face away from the light, in order to distribute the illumination. It will be necessary for Mr. Barnett to consult some well-known text-book on the subject, such as the "Studio, and What to Do in It," to obtain hints as to lighting, screens, etc.—CYANIN.

5539. **Light.**—If there are more than one window, draw the blinds of all except one. Remove the blinds of the latter if possible, especially if they are venetian, and other window encumbrances. To soften the light, place sheets of tissue or thin oiled paper in front of the windows. Cover lower part of the window with thick brown paper.—INQUISITIVE.

5540. **Aristotypes Turning Yellow.**—A sure sign of the acidity of the fixing bath, and consequent sulphur toning. Nothing can be done but to immediately destroy the print, and make the fixing bath alkaline. It more generally makes its appearance in cases of over-toning, when some secondary action seems to take place.—INQUISITIVE.

5540. **Aristotype Turning Yellow.**—Prints ought to be toned till they show the desired colour in transparency, not by reflected light. The colour they have then will return in drying.—ED. LINGANG.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED. AM: PHOTO.

GEORGE BUTT.—(1) You can make good enlargements under the conditions named in your letter. (2) About 12 in. of magnesium ribbon. (3) The society named is an excellent one and doing good work.

G. H. P.—"Dilute solution" means, we hear, 5 gr. to the ounce.

SERREO.—The partition is quite safe, and reflections would not hurt.

LANE PLATE.—Probably you did not wash your slides well; try soaking in a solution of oxalic acid 10 gr., water 1 oz.; if not successful, send us up a slide, and we will see what we can do for you.

D. R. O. N.—We should say G, B, D, F; all others equal.

G. BRODIE.—The American slides measure 4 by 3, but the longer side is always horizontal, so that an ordinary carrier in which the slides can be pushed straight through from end to end will take them. The slides are, taking them on the whole, tending to thinness, and show well with an oil lamp.

R. P.—We place as follows: B, A, C. The lenses are practically worth the extra cost. See also notes on Ross' concentric lens, this issue, p. 345. The statement as to the foreign lenses is sometimes by chance true. Either A or C lenses above are perfectly reliable. Choose parallel square bellows, half-plate if you mean to tramp about much, whole-plate if somebody else will carry it; back should have central axial swing. The old lenses of Ross and Dallmeyer cannot be bettered for their class. Will you write us privately, and let us know how much you will spend, and then we can advise more fully.

Geo. PRILE.—Perhaps. But as the criticism of your print was not written by the Editor, but by one of the judges, we fail to see how you can state that the Editor is prejudiced against you. With regard to your statement as to the Supplement, it is erroneous. Since February we have been giving four extra pages every week, therefore you have not been robbed of anything. Will you allow us to point out that our competitions are not instituted as means of underhand attempts of annoying the Editor or anyone else, and if you use them as such we shall exercise our right of refusing your prints. The judging is done fairly and honestly, and the criticism as impartially as possible. That we cannot please all is obvious, that we offend some is seemingly essential, that it is more trouble than enough we are sure.

HAWTHORN.—We cannot trace your slides at all, but will make a search. Our publishers would send AMATEUR PHOTOGRAPHER for March 18th, for 2d.

F. H. DYSON.—Metal slides are cheap, but heavy, Talbot and Emmer sell cheap mahogany slides, Chadwick has some very light cheap slides, the Barnett-Chadwick, and Taylor, Taylor and Hobson also offer the Featherweight dark slides at reasonable rates.

BLANCHE.—(1) Make up a fresh bath when working slow; the plates named always take a long time to fix in the ordinary bath—you can double the strength of hypo without any trouble arising. (2) Not always; to remove silver stains is the most ticklish job we know—try the acid fixing bath freshly mixed, and rub with your finger; or else ferricyanide 20 gr., sulphocyanide of potash 14 oz., water 5 oz.

F. DUNDAS TODD.—Many thanks for your amusing letter—accept our congratulations on account of additions, we mean of course the medal. Sorry we are to lose you—but shall hope to hear from you even from Vancouver's Land.

Geo. BATES.—Replace the leather with stout jean, and blacken over.

F. G. MARTIN.—(1) Considering the short time you have worked, the print is very fair; it would have been improved by a little longer exposure. As an artistic picture, we cannot congratulate, but it shows careful work, and with perseverance you would reach our standard. (2) The best plates for copying drawings, etc., are Mawson and Swan's or England's photo-mechanical plates. They are very slow; under normal conditions, about five minutes' exposures will be right.

L. G.—We should prefer No. 1 most decidedly. (2) The simplest developer for instantaneous work is either Rodinal, the one-solution Paramidophenol

developer, or else a one-solution developer like Edwards' snap shot. Perhaps if you would like to make it up yourself, the following, which is Warnerke's form, will help you—

|                           |           |
|---------------------------|-----------|
| Sodium sulphite .. ..     | 40 parts. |
| Hot distilled water .. .. | 100 "     |
| Eikonogen .. ..           | 10 "      |
| Caustic potash .. ..      | 10 "      |

Dilute with from 3 to 10 times the quantity of water according to the required degree of contrast. (3) The alum bath is not necessary, and may be omitted altogether. Always placed to help you.

L. POLLARD.—(1) We have not seen the camera you name, and therefore are unable to express any opinion on it. (2) It is absolutely essential if you want to get similar results, to develop both plates at once, and to the same degree. (3) If you cannot tell the two negatives in other way, you must mark them as they come from the camera with R. and L., and then transpose these when making the transparencies. (4) What developer and fixing bath are you using? Let us know, and then we may be able to help you.

C. H. OXFORD.—The subject of your letter is one which is a personal matter to be settled by you and the firm in question, and we therefore do not feel at all inclined either to open our columns to the dispute or to enter into it personally. Every manufacturer and dealer is at liberty, as we were, to obtain the highest price he can for his goods. It is merely the old question of retailers and stores, and your conclusion that a firm "are endeavouring by their action to induce dealers to extract from purchasers a higher price for articles manufactured by the firm, than the dealers themselves feel justified in charging" is wrong. The statement should be this—a firm fix the price of a given article at so much, which they have found to be sufficient to cover the cost of making and to give a fair profit to themselves and to the retailer, but if a retailer will deliberately sacrifice half that profit then he must either be suicidal in policy, or else hope by an increase of business to make in the same amount in the end, but the first producer is at liberty surely to say, "Well neither you nor any other man shall undersell me in my own goods, therefore I will not supply you." Remember the old saw so well worked out by Charles Reade, "Put yourself in his place," and imagine yourself the maker, and then see what you would say.

J. J. THORNTON.—(1) You may rely upon the lenses for turning out good work. (2) Clean the glasses warm slightly, squeegee the wet chloride prints on to them and allow to dry. They will adhere fast enough without any gelatine solution.

MAZA.—We will try this week to tone the paper with the formula given, and then write you.

H. L. RICHARDSON.—We should suggest the following method of procedure: Mix a developer as follows—pyro, 2 gr.; bromide, 2 gr.; water, 1½ oz.; apply to the plate, and allow the film to soak thoroughly in it, then add about 30 drops of the following:

|                           |       |
|---------------------------|-------|
| Sodium carbonate .. ..    | 1 oz. |
| Potassium carbonate .. .. | 1 "   |
| ferrocyanide .. ..        | 1 "   |
| Distilled water, to .. .. | 10 "  |

If the image appears very quickly, which we hardly think likely, add more bromide. If you will send us two exposed plates we will do our best to save them for you; or bring two up on Friday at 5 p.m., or Saturday at 12, we shall be pleased to develop them with you. Your choice of hydroquinone we do not think happy. Try and come up and see us.

J. L. G.—You give no details as to developer, but it is probably over-exposed and fogged in developing. What plates are you using? What developer? Write fully, and we will try to help you.

L. G. A.—(1) Apply to H. M. Primrose, Whitehall, S.W. (2) There is no such book published, though the 1892 "Annual" will have an article on the subject. (3) St. Albans is a good centre for work. (4) So far from being out of place, we should be glad to have them.

OPTIMUS.—(1) Try Chadwick or Shew's new cameras; both can be had without lenses. The lens you have is quite quick enough for instantaneous work. (2) Soak the negative in methylated spirit, and rub the paper off with the tip of the finger, then wash well and soak in oxalic acid 1 oz., water 20 oz.

P. D. BARNETT.—(1) Place the frames exactly opposite a window, and the camera in front. (2) Use bright diffused daylight. (3) Ordinary rapidity, such as the Imperial dry plates, Paget, Fry, or Marion's. (4) Any gelatin-chloride printing-out paper.

H. S.—You would have to take a step back and work wet collodion to produce positives in the camera; or if you are content to turn out positives on sheet iron or tin, or ferrotypes as they are called, you could obtain plates ready prepared from Fallowfield, 146, Charing Cross Road, London, W. Write again.

A. J. GARWOOD.—Dust powdered pumice stone over the mounted print, and rub with a pad of cotton wool till sufficiently matt. If you mount on the back of the squeegee print a sheet of waterproof enamel paper (to be had from Wheeler and Co, King Street, Manchester), allow to dry, and then strip; you will have no difficulty in preserving surface.

TRIX.—(1) Clean the glass thoroughly, dust over with French chalk, and then dust off again lightly, lay the wet print down on the glass and squeegee thoroughly—merely pressing down will not do—then



allow to dry, and then strip and mount. (2) Your prints from negatives developed by anyone else would not be admissible.

A. H. ASTON.—Pilkington's surgeons' electric lamp may be had from Pilkington, Red Lion Street, Holborn, E.C., price 21s. (?) We shall be very pleased to criticise prints for you, and they would be eligible for competition afterwards.

H. M.—See answer to L. G., above.

PHOTO. LOVER.—Your neighbour is cantankerous. Tell him to mind his own business, and not interfere with your garden and what is in it.

C. E. EASTGATE.—We shall publish the articles named in book form. Several articles have appeared in the *Photographic Quarterly* on the second subject, but there is no book on the subject.

SIZE.—The quarter-plate, by all means. We do not see that the 5 by 4 gives sufficient advantage in size to warrant the extra weight, and the 5 in. lens will include an angle of 45 deg., and the 6 in. lens an angle of 45 deg., therefore the difference will not be appreciable. We at least agree with you re competition, and hopelessly despair of ever satisfying all.

W. H. BIBBY.—Many thanks for letters. Print duly received and admitted.

A. N. G.—We have such a scheme as you propose in hand, and hope to complete shortly.

## Monthly Competition.

### No. 35, INLAND SCENERY, WITH OR WITHOUT FIGURES.

Prints have been received from—

|                    |                  |
|--------------------|------------------|
| W. R. Gould        | London           |
| E. Delamotte       | Canterbury       |
| G. H. Willan       | Huddersfield     |
| G. F. Firth        | Wakefield        |
| R. R. Barron       | Bury St. Edmunds |
| S. Manners         | London           |
| G. Jenkins         | Croydon          |
| W. T. Adams        | S. Africa        |
| J. A. MacAdam      | Assam            |
| W. Mitchell        | Keighley         |
| J. R. Matthews     | Carlisle         |
| J. A. Booth        | Reading          |
| A. G. Cooke        | London           |
| Miss M. Ash        | Mentone          |
| R. H. Mercer       | Manchester       |
| A. H. Hardcastle   | York             |
| H. Thelwell        | York             |
| Miss S. E. Douglas | Perth            |
| G. Cardisle        | Newcastle        |
| H. J. L. J. Masse  | London           |
| Mrs. Jessop        | Inston           |
| W. Clarke          | Loughborough     |
| C. Muller          | London           |
| W. White           | Ballaclolla      |
| A. Todd            | Kirkcaldy        |
| J. Twigg           | Staffordshire    |
| R. K. Tanden       | Edinburgh        |
| T. Maides          | Midhurst         |
| J. E. Black        | Peebles          |
| Miss J. Niblett    | Ledbury          |
| W. H. Fenwick      | Stanhope         |
| Mrs. Hanbury Twigg | Staffordshire    |
| R. Teglio          | Genoa            |
| Miss A. Potts      | Chester          |
| W. Taylor          | London           |
| D. W. Gilbert      | Birmingham       |
| C. Owen            | Reading          |
| J. Wadling         | Toward Point     |
| P. Brookbank       | Caton            |
| J. G. Barrow       | Ruthin           |
| D. O. Roberts      | London           |
| J. S. Roscoe       | Bolton           |
| W. H. Sadler       | Horsham          |
| H. M. Woolcombe    | London           |
| Miss Hardman       | Reigate          |
| H. L. M. Klintoch  | London           |
| F. Bailey          | Canterbury       |
| Mrs. Richardson    | Notts.           |
| A. H. Lewis        | London           |
| F. K. Brown        | Cardiff          |
| F. E. Currey       | Lismore          |
| W. Ingham          | Rochdale         |
| G. Lewis           | Tunbridge Wells  |
| E. H. Seamer       | Bury St. Edmunds |
| Miss C. Fawcett    | Durham           |
| J. Macmurdo        | Bell's Hill      |
| F. Ferguson        | Islay            |
| C. S. Stone        | Pinner           |
| J. P. Fowler       | London           |
| A. H. Vesey        | London           |
| W. Bailey          | Douglas          |
| W. A. Hawes        | Aberdeen         |
| C. Moss            | London           |
| Mrs. Wall          | Ashturton        |
| H. Meynell         | Farley           |
| F. G. Benson       | York             |
| C. Gape            | Scoles           |
| E. J. Caton        | London           |
| T. Watson          | Whitby           |
| H. Flack           | Kirkcaldy        |
| T. M. Muller       | B. Grinstead     |
| R. W. Branthwaite  | Rickmansworth    |
| H. Muller          | B. Grinstead     |
| J. Smith           | Liverpool        |

|                        |                       |
|------------------------|-----------------------|
| G. S. Pasco            | London                |
| A. Smith               | W. Bromwich           |
| Miss E. Annesley       | Pau                   |
| H. Holt                | Liverpool             |
| C. J. Hartley          | Hebden Bridge         |
| H. Woolley             | Gloucester            |
| J. Simpson             | Kingstown             |
| H. J. Maidsen          | Ashbourne             |
| A. T. Morrison         | Swinton               |
| T. B. Judson           | Worcester             |
| P. S. Sherdown         | Glenageary            |
| J. L. S. Bisco         | Jersey                |
| G. E. Briant           | Manchester            |
| J. Stokes              | Wolverhampton         |
| G. Woods               | Hastings              |
| G. Mathewson           | Kirkcaldy             |
| J. H. Welch            | Liverpool             |
| W. Wallis              | Edinburgh             |
| W. H. Bibby            | Blackburn             |
| T. Walshe              | Rosscabery            |
| James Walshe           | Rosscabery            |
| C. V. Dennis           | Mumbles               |
| W. E. Wannington       | Malta                 |
| Stuart G. Geekie       | Coupar Angus          |
| A. J. Champness        | London                |
| C. Ballard             | Putney                |
| H. E. Freeman          | Tring                 |
| A. Potter              | Near Rugby            |
| W. R. Potter           | Rutland               |
| H. W. Rigby-Jones      | Blundellsands         |
| J. A. Pollock          | Belfast               |
| J. Harriman            | Henley                |
| E. V. Ive              | Henley-on-Thames      |
| W. S. Crowther         | Pudsey                |
| E. M. Pucharel         | Leighton Buzzard      |
| H. J. Heaton           | Southport             |
| A. Geekie              | Abbotsville           |
| J. Willis              | Carnarvon             |
| W. L. Thirkettle       | Stoke Newington       |
| A. W. Boatman          | Essex                 |
| C. F. Lowry Barnwell   | Staffordshire         |
| S. C. Bright           | Genoa                 |
| A. F. Smith            | Surrey                |
| W. Humphreys           | Netherton             |
| A. J. Adams            | Ambleside             |
| G. U. Yule             | Kensington            |
| B. Jerome              | Mayfield              |
| G. A. Carruthers       | Liscard               |
| W. S. Anderson         | Edinburgh             |
| J. Chichester Matthews | Torquay               |
| T. Douglas             | Gatehead              |
| H. C. Bentley          | Louth                 |
| T. W. Nettleship       | Bawtry                |
| R. Bradley             | Ashton-under-Lyne     |
| G. L. Snowball         | Gosforth              |
| S. J. Bradburn         | Manchester            |
| P. S. Foster           | Halifax               |
| G. Keyte               | Ramsgate              |
| J. P. Burgess          | Bradford              |
| A. Fogwill             | Portsmouth            |
| W. Hayles              | Cambridge             |
| A. Hughson             | Mollington            |
| C. J. Legge            | Birkenhead            |
| C. Clark               | Edinburgh             |
| N. M. Hinshelwood      | S. Kensington         |
| G. N. Ashley           | Owthorpe              |
| J. B. Wilkinson        | Bridlington Quay      |
| J. V. Kingsley         | Tufnell Park          |
| A. J. Golving          | Whithorn              |
| W. T. Hawthorn         | Rugby                 |
| M. H. Hudson           | Joybridge             |
| C. Smallbridge         | Durham                |
| R. H. Blyth            | Enfield               |
| C. H. Thomas           | Windermere            |
| M. Smallpiece          | Shepherd's Bush       |
| C. Hughes Hallett      | Dinsdale              |
| J. Pattison            | Bishop Auckland       |
| J. Stuart Edwards      | Kendal                |
| T. R. Walls            | Darlington            |
| E. Ensor               | Banbury               |
| A. Wheeler             | South Shields         |
| H. Popham              | Farnon                |
| F. A. Whitmore         | Bournemouth           |
| E. Greenleaves         | Ryde                  |
| S. D. Morgan           | Manchester            |
| E. H. Chapman          | Bradford              |
| S. Wilkinson           | Southsea              |
| V. W. Misselbrook      | Birmingham            |
| H. Artiss              | Louth                 |
| H. S. Forman           | Louth                 |
| E. H. Forman           | Louth                 |
| F. M. Lee              | Brynffynon Rhydylllan |
| A. James               | Barry                 |
| W. Marsland            | Ashton-under-Lyne     |
| V. E. Baird            | Broughty Ferry        |
| R. W. Derrydale        | Leominster            |
| A. B. Cooper           | Chesterdale           |
| A. H. Ashon            | Harborne              |
| H. N. Malan            | Epsom                 |
| F. J. Carr             | Willows-Walker        |
| H. Rendell             | South Molton          |
| C. Cremer              | Faversham             |
| A. D'Hege              | Birkenhead            |
| J. Kauffman            | Zurich                |
| F. Partridge           | Launceston            |
| H. B. Dart             | Torrington            |
| F. J. Sheffield        | Upper Norwood         |
| A. R. Turner           | Leeds                 |
| F. E. Edwards          | Bedford               |

|                  |                      |
|------------------|----------------------|
| A. E. Bolderston | Tranmere             |
| J. C. Moreland   | Belfast              |
| J. W. Crozer     | Hexham               |
| A. Jamieson      | Lanark               |
| C. Mummary       | Hampstead            |
| C. R. May        | Capham Common        |
| B. Lintoll       | Horsesham            |
| A. H. Payne      | Brookley             |
| A. Silver, jun.  | Wolverhampton        |
| J. Dixon         | Bernonsey            |
| E. Stone         | London               |
| A. L. Spiller    | London               |
| E. H. Aldwell    | St. John's           |
| W. J. Giddins    | General Post Office  |
| C. Churchill     | E. Greenwich         |
| G. Ingram        | Ascot                |
| H. Fulljames     | Wimbleton            |
| H. R. Wernmuller | Clapton              |
| D. R. Williams   | Barnsbury            |
| J. H. Gear       | Lincoln's Inn Fields |
| F. W. Medway     | Bethnal Green Road   |
| W. C. Franter    | Victoria Park        |
| C. Gregory       | Crouch End           |
| C. F. Archer     | Clapham              |
| O. Shimmion      | Ipswich              |
| F. B. Bryant     | London               |
| A. Gibbs         | Bristol              |
| W. Pearce        | Wednesbury           |
| J. F. Banks      | Norwich              |
| F. Spalding      | Norwich              |
| J. Hyde          | Liverpool            |
| A. A. Ashton     | India                |
| A. J. Pictor     |                      |
| V. S. Pictor     |                      |
| J. W. Evans      | Wolverhampton        |
| L. B. Beards     | Clevedon             |
| G. Steina        | Genoa                |
| P. W. Mangham    | Sheffield            |
| G. S. Symons     | Plymouth             |
| M. Mason         | Suffolk              |
| C. Tyley         | London               |
| W. Willey        | Louth                |
| A. Allender      | Liverpool            |
| E. Connal        | Glasgow              |
| J. Robertshawe   | Hepworth             |
| C. Humphrey      | Luton                |
| R. A. Luck       | Durham               |
| J. H. Stamp      | Birmingham           |
| W. Northwood     | Wordsley             |

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word: compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m., and other communications having reference to the Sale and Exchange) column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Background.**—Cloth background (conservatory), 8 by 6, good condition, 10s.—Walsh, Queen's Park Road, Blackburn.

**Bicycles, tricycles, etc.**—4s. in. Coventry Mechanics' bicycle, in first-class condition, ball bearings, £3, or open to exchange.—Roberts, Photographer Mold.

Safety bicycle, Mackintosh cushion tyres, balls throughout, plated and enamelled, in splendid order, easy running, with all accessories, cost £15, accept £8.—H. Baker, 2, Acre Lane, Brixton, S.W.

**Cameras, etc.**—A Rayment patent whole-plate



camera and three double dark slides, in splendid condition, with canvas case, also tripod, cost over £9, will take £7 5s., exchange for microscope, etc., by good maker.—Apply to Alpha, 1, Creed Lane, London, E.C.

Lancaster brass-bound Instantograph, half-plate, mahogany changing box, Thornton-Pickard time and instantaneous shutter, also See-saw shutter, leather case and shoulder strap, and lock and key, splendid condition, price £6.—Mr. Kennedy, 2, Hope Villas, High Street, Ramsgate.

Strong half camera, leather bellows, reversing back, two slides, stand, etc., £2 10s.—Thornton, 15, Bromley Road, Beckenham.

Underwood's whole-plate 1891 Instanto camera, all movements, three slides, carriers, and extra front, as new, cost £6 12s., price £4 10s.; bargain.—Avery, 45, Prince of Wales Road, Kentish Town, London.

Whole-plate Underwood's Convention camera, with tripod and case, no lens, £3 3s.—W., 30, Nutfield Road, East Dulwich, S.E.

**Cameras, Lenses, etc.**—Quarter-plate camera, Kinnear cloth bellows, double slide (Fallowfield's), Lancaster landscape lens, folding stand, all new, 25s.; mahogany square camera, plate 7 by 7, leather bellows, double slide, fitted half and quarter carriers, new full-plate landscape lens, sliding ash stand, capital condition, 22s.—E. Lyon, 27, Pilgrim Street, Ludgate Hill, E.C.

5 by 4 Kinnear long-extension tourist camera, leather bellows, best make, with Eastman rollholder, three double backs, and 5 by 4 Optimus R.R. lens, also hand-camera to take same lens, £6 6s.—Tilt, 88, Stockwell Park Road, S.W.

Lancaster's whole-plate Multum-in-Parvo, two extra carriers, take 15s.; also Vever's single lens, cost 3s. 6d., take 2s., never used.—No. 276, office of this paper, 1, Creed Lane, E.C.

**Hand-Cameras, etc.**—Hand-camera, cost over £3, price £2 10s., fitted with roller paper; approval.—H. B. Smith, Brooklands, Broughton, Preston.

Stereoscopic Company's Dispatch hand-camera, six double backs, cost £12 15s., price £8, an excellent instrument and equal to new.—Bygrave, 13, Canterbury Road, Brixton, S.W.

Kodak, for sale. Folding Kodak, No. 5, complete, with strong folding tripod to suit, also waterproof canvas cases, with straps, for both Kodak and tripod, all new and in first class order, cost £16. Can be seen at this office.—Address, James Keith, C.E., 57, Holborn Viaduct, London, E.C.

Kodak No. 2, perfect order, for £4; deposit.—No. 579, office of this paper, 1, Creed Lane, E.C.

Shuttle hand-camera, cost £7 12s. 6d. last week, £6 10s., cash wanted.—55, Great Sutton Street, E.C.

**Lantern.**—Optimus lantern, 4 in. condensers, perfectly new, 25s.—Vernon, 94, Tulse Hill, S.W.

**Lamp.**—Stock's patent 4-wick lamp for optical lantern, gives light equal to limelight, cost a month ago 23s., take 18s.—Roberts, Photographer, Mold.

**Lenses, etc.**—8 by 5 Sands and Hunter's R.R., iris diaphragm, quite new, cost £4 10s., price £2 15s.; 7 by 5 R.R., as new, 25s.; half-plate wide-angle single lens, 10s.—Avery, 45, Prince of Wales Road, Kentish Town.

No. 2A Ross rapid acting portrait lens, patent, sold cheap.—Apply, Murdock, 11, Bothwell Street, Glasgow.

Exchange carte-de-visite portrait lens, by Corfior, Paris, for wide-angle rectilinear or landscape lens by good maker.—No. 278, office of this paper, 1, Creed Lane, E.C.

Ross' whole-plate landscape lens, perfect condition, 40s.—Jeffreys, Bridge House, Chelmsford.

Lens, rectilinear, 7 by 5, grand for work, hood, stops, and flange, 25s.; three Instanto dark slides, new, 6s. 6d., each half; approval.—Adams, Harold Wood, Essex. [Trade.]

**Rollholder.**—Eastman's latest pattern rollholder for 7½ by 5 camera, with two extra clamping reels, £2 7s. 6d., perfect; on approval; deposit.—No. 250, office of this paper, 1, Creed Lane, E.C.

**Sets.**—Facile camera and case with lock, holds plates also, good condition, cost 123s. 6d., will take 95s.; Mawson stereo camera, 6½ by 3½, mahogany, bellows, two rack lenses, stops, case, tripod stand, three double backs, good order, cost £10, will take 105s.; samples sent; also 5 by 4 lens, 25s.; detective quarter lens, 5s.—R., 26, Grey Street, Newcastle.

Half-plate 1891 Instantograph camera, new, fitted R.R. Optimus lens, complete, with tripod, folding legs, sundries, £4 11s. lowest.—J. B., 29, Farringdon Street, E.C.

For sale, whole-plate camera, with swing back, rising front, three double slides, three-fold tripod, rapid symmetrical lens, 10 by 8, with shutter, printing frames, and carriers, and dices, cost price £14, will take £9 10s., or exchange for lady's safety, Dunlop tyres; approval; deposit.—Mr. Pickthall, Worth Village, Keighley, Yorkshire.

The property of an amateur. 7½ by 5 modern tourist camera by Collins, double swing back, reversing frame, rising front, rack and pinion, three double backs, carriers for half and quarter plate, price £5 10s.; 8½ by 6½ rapid rectilinear by Shew, price £3; Ross' 8½ by 6½ rapid symmetrical, price £4 10s. The above are practically new, and can be seen and tested at 46, Stamford Hill, N.

Complete half plate set, Taylor and Hobson's lens (iris), four-fold tripod, two double backs, Pickard's

shutter, case, perfect, giving up photography, cost £11 11s. What offers?—Anderson, 39, Esplanade, Greenock.

Camera, half-plate, light, double extension, turntable, fitted with Optimus lens, three double backs, waterproof case, tripod stand, all in perfect condition, three developing and three toning dishes, three printing frames, background, etc., and all necessary for immediate use, cheap, £8 10s.—E. C. Brown, 366, Kingsland Road, London, N.E.

Lancaster's 1891 half-plate Instantograph camera, slide, tripod, rapid rectilinear lens, good as new, only 68s.—53, Slad Road, Stroud. [Trade.]

Superior half-plate long-extension camera, three double dark slides, all improvements, fitted with rapid rectilinear lens and four-fold tripod, not soiled, bargain, £5 5s.—Goad, 38, Rainbow Street, Canterwell.

Half-plate complete set, all contained in single leather case, cost £13 10s., quite new. What offers? Or exchange for really good cushion tyre safety. May be seen at the office of this paper.—No. 275, 1, Creed Lane, E.C.

Half-plate Instantograph camera, Leviathan lens, two double backs, light tripod bag, etc., complete, all in good condition. What offers?—J. N., 145, Blythe Road, West Kensington.

Half plate camera by Dollond, very light and with all improvements, three double backs, rectigraph lens, Cyclist stand, and T. P. shutter, good as new, price £6 10s.—Pain, Kingswood, East Sheen, S.W.

**Shutters.**—Extra-rapid Thornton-Pickard double blind shutter, 2 in. 16s. Wanted, Watkin's meter.—Shaw, 5, Great Ancoats, Manchester.

**Sundries.**—Iron enlarging lantern, 3-wick oil lamp, 5 in. condenser, no front lens, little used; also whole-plate negative washer, syphon action, adjustable for all smaller sizes; expect about £2 15s., but offers invited for one or both. On view at AMATEUR PHOTOGRAPHER office.—No. 277, 1, Creed Lane, E.C.

Clean numbers of "English Mechanic," from January, 1890, to present date; sell half-price.—Roberts, Photographer, Mold.

Banjo, plated fittings, walnut handle, powerful tone, excellent order, price 15s., cost over double; approval allowed.—Albert Henry, 4, West Brixton, S.W.

Six half-plate printing frames, 5s, carriage paid; five whole-plate Eastman's film carriers, 4s. 6d.—C., 9, Portman Square, W.

Roll of Eastman's transparent film, unopened, for Kodak 2, 100 exposures, cost 17s. 6d., for 11s.—No. 281, office of this paper, 1, Creed Lane, E.C.

Two whole-plate slides, Watson's best, 24s.; lock whole plate camera case, 10s.; Ashford's sliding tripod, 15s.—Avery, 45, Prince of Wales Road, Kentish Town, London.

For sale, AMATEUR PHOTOGRAPHER, 1889, '90, '91, incomplete, all parts separately, also Kershaw shutter, hardly used, for 2½ in. hood.—Address, E. C., c/o AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C.

Clarinet, Eflat, complete, quarter-plate set, Lancaster's, cost 30s., and splendid collection of birds' eggs; exchange either for good half-plate burnisher, or sell separately.—Alfred Lyons, Morpeth, Northumberland.

**Washer.**—Jefferies' plate and print washer, whole-plate, with rack, good condition. Cash offers? Buying larger size; approval.—Allen, 2, Pyrmont, Barber Road, Sheffield.

## WANTED.

**Hand-Cameras, etc.**—Good hand camera, quarter-plate, must be cheap for cash.—W. Pickering, 41, Sefton Street, Liverpool.

Wanted, 23 Facile hand-cameras, with landscape lenses and sunk finders, second-hand, but in good working order, for an Exploration Company.—Particulars to Jonathan Fallowfield, Central Photo Stores, 146, Charing Cross Road, London.

**Lantern.**—Magic lantern, 4 in. or larger condensers, oil and limelight; approval; cheap for cash.—P., 46, Green Street, South Shields.

**Sets.**—Wanted, half-plate set, with rectilinear lens; will exchange new Rational bicycle, £2 in., or sell.—John Lowden, 37, Maryland Road, New Town, Stratford, Essex.

Wanted, high-class quarter-plate outfit, complete; state makers' names and price for cash.—Photo, The Abbey, Windermere.

**Stereoscopic Apparatus.**—Wanted, pair quarter stereoscopic rapid rectilinear lenses; approval; state price.—F. Ward, 3, Russell Street, Stockton.

**Sundries.**—Wanted, 20 by 16 in. printing frame, also Thornton-Pickard shutter for 3 in. hood, time and instantaneous.—Address, E. C., c/o AMATEUR PHOTOGRAPHER, 1, Creed Lane.

Camera stand. Wanted, walking-stick or other small stand, suitable for hand-camera, cheap.—Norman Sloan, 2, Crown Circle, Dowanhill, Glasgow.

**Bargains in Cameras.**—Whole-plate Underwood's Instanto camera, all improvements, camera, lens, blind shutter, double slide, folding stand and case, as new, £4 17s. 6d.; 12 by 10 camera, by Morley, Islington, double extension leather bellows, three double and two single slides, fitted Lancaster's lens, rotating stops, in finest order, £5 15s.; half-plate finest Spanish mahogany camera, back focussing, for wide-angle, finest leather bellows, rapid rectilinear lens, iris stops, by Mallett, three double slides and three-fold ash stand, as new, take £6 17s. 6d., worth £10 10s.; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s., worth £5; half-plate Lancaster's Instantograph, 1891, warranted as new, with all improvements, including camera, Instantograph lenses, iris stops, instantaneous shutter, double slide, and folding stand, take 72s. 6d.; also quarter-plate Instantograph set, as new, including camera, three slides, lens, shutter, folding stand, and case, all latest improvements, 37s. 6d. lowest; 5 by 4 camera by Rouch, Spanish mahogany, reversing, fitted Riley rectilinear lens, three double slides, and folding stand, take 50s., cheap; Lancaster's special patent quarter-plate camera, best leather bellows, reversing back, brass bound, fitted rapid rectilinear lens, double slide, and folding stand, 55s. All above warranted in every detail. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Lenses.**—15 by 12 Dallmeyer rapid rectilinear lens, as new, Waterhouse stops 19 in. focus, as new, £9, cost £15, a bargain; 15 by 12 Optimus wide angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; Ross whole-plate actinic triplet, for large heads or groups, Waterhouse stops, take £4 15s.; whole-plate rapid rectilinear by Adams, Aldersgate Street, take 33s.; 8 by 5 Ross rapid symmetrical, iris stops, 9 in. focus, quite new, take £4 17s. 6d.; half-plate landscape and view lens (by Pettit, London), fitted iris stops, covers well, splendid definition, 15s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; 5 by 4 rapid rectigraph lens, iris stops, cost 40s., take 25s., as new; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d. All above lenses are warranted as described.—On view CITY SALE AND EXCHANGE ROOMS, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Hand-Cameras.**—For sale, Optimus magazine, quarter-plate, for horizontal or vertical pictures, carries twenty-three plates, Optimus rapid rectilinear lenses, finest order, take £5 15s.; London Stereoscopic Company's Despatch detective, covered black leather, fitted Stereoscopic Company's rapid rectilinear lens, Newman's shutter, two finders, three double slides, rack focussing, size quarter-plate, as new, take £6 6s., cost £10 10s.; Mayfield's quarter-plate pocket camera, latest improvements, rapid rectilinear lens, instantaneous shutter, two double slides, solid leather case, take £2 2s., lowest; Optimus magazine hand-camera, carries twelve quarter-plates, two finders, Optimus rapid rectilinear lens, as new, £4 15s., lowest; Griffith's hand-camera, three quarter-plate slides, good lens, etc., 17s. 6d., as new. Facile hand-camera, fine view lens, twelve quarter-plates, view finder, instantaneous shutter, take £2 17s. 6d. All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City.

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# The AMATEUR PHOTOGRAPHER

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Telegraphic Address: VINEY, LONDON

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FRIDAY, MAY 6, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

**OUR VIEWS.**—"Photography at Home" Competition—Our Monthly Competitions—Underground Photography—Ives on Photography in the Colours of Nature.

**LEADER.**—Notes on Enlarging.

**LETTERS.**—A Suggestion (A Novice)—The Blister Fiend (H. S. Large)—Monthly Competitions (W. McEwen, W. T. Tucker, J. A. Booth, Bernard Lintott, S. C. Bright, F. de W. Batty).

**REVIEWS.**—Annuaire de Photographie (Buguet)—Guide to Electric Lighting (Bottone)—and Jahrbuch der Photographie (Eder).

**ARTICLES.**—Elementary Photography (Hodges)—A Simple Method of Converting Quarter-plate Camera into a Stereoscopic One (Watts)—Stereoscopic Photography (Chadwick)—New Process of Making Oxygen (Parkinson's)—Extemporised Hand-Cameras (Miles Barnes)—An Introduction to Silver Printing (Goddard)—Calculation of Exposures (Watkins).

**EXHIBITIONS.**—Birmingham Phot. Soc.—Selby Camera Club—Ulster Am. Phot. Soc.

**SOCIETIES' MEETINGS.**—Aberdeen—Coventry—Croydon—E. London—Fairfield—Gloucester—Greenock—Hackney—Holborn—Ireland—Leeds—Leytonstone—Liverpool—Newcastle—Photographic Society of Great Britain—Putney—Richmond—S. Manchester—Sydenham—W. London.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

### TERMS OF SUBSCRIPTION—

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**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE and EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZEL, WATSON, and VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE and EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

"Amateur Photographer" Monthly Competition No. 36.—  
"SEA PIECES AND RIVER SCENERY." Latest day, May 30th.—  
Prizes: Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, June 17th.)

THE entry forms for our next Quarterly Competition, "Photography at Home," are now ready, and will be sent on application when accompanied by stamp. This, as is well known, was instituted as "Home Portraiture," but the present title rather extends the field, which may now be said to include portraiture and figure study, lawn tennis parties, etc., the main idea being that this should be essentially work done at or near home, in opposition to our "Holidays with the Camera" Competition, which should be work done whilst on tour or in the holidays.

It has been suggested to us that it would be extremely unfair to allow any competitor to send in work for this competition which has been produced in the studio of a professional photographer, or by his tools, therefore in the entry form this has been specially barred. Possibly there seems some doubt as to whether a genre or figure study not taken at home would be admissible, but we see no objection to this, and can point out that such a picture as "The Smithy," by Mr. F. Dundas Todd, which deservedly won the Silver Medal in our last competition, would be eligible, though, strictly speaking, "The Smithy" may not be the competitor's home. The latest day for receiving prints for this competition will be June 30th, and all prints will be acknowledged in our columns, and a Special Number issued with illustrations, and competitors will oblige us by giving brief remarks as to the production of the pictures, etc., so as to make the Special Number more than a bare record of the details of plate used, etc.

WHILST on the subject of competitions we may, perhaps, take this opportunity of referring to the last one, No. 35, which has given rise to some little discussion as to the judging. So far as lies in our power, this is done as impartially as possible. It is never done by one judge alone, and all prints are examined and sorted out into two classes, the sheep and the goats; then the better lot are examined again, now more critically, both for technique and artistic merit. This generally means that about twenty or thirty prints showing good work are left. These are then carefully weeded through, and then, finally, another selection is made, and the three first prints chosen, each print being carefully and critically examined, and the points of each carefully weighed. We would like to draw the attention of all to the fact that the judges see the prints themselves, whereas, probably, many of those who find fault with the judging do not see them. Unfortunately, we have not at present any photo-mechanical process which will allow of us reproducing them with anything like the perfection of



rendering we should like to see, as the method of printing such a paper as ours is utterly beyond any of the finer processes, such as collotype, Woodbury-gravure, etc. The half-tone, or grain block process, is the only one to use.

That these competitions are of interest to many of our readers is evident from the increasing number of prints we receive every month. Of the amount of work entailed on us by these competitions probably few of our readers have any idea, but the last one meant, taking it from start to finish, at least one person's work for four or five days, each day averaging nine or ten hours, and this exclusive of revising proofs, etc. That the competitions have absorbed far more of our space than we ever reckoned on or like, we cannot help confessing, and therefore with the new volume of the AMATEUR PHOTOGRAPHER which commences with our issue of July 1st, we shall carry out some such plan as hinted at in our last, viz., to divide all prints into three classes, the first to consist of say ten or fifteen, the second fifteen, the third twenty-five, and the remaining prints to be briefly noted without any details.

Many of our competitors seem to think that we can receive any rubbish; we have to now, and it is rarely we overstep the bounds to tell a competitor that his print is a disgrace to him, though from a cursory examination of the present competition, No. 36, we shall be compelled to do so in some cases. Many competitors have an artistic study and spoil it by unsuitable printing, by carelessness or haste. To send in a print done in a hurry is not wise; dirt, unequal toning, or bad mounting sadly handicap a print. Our awards are given for artistic and good technical work, and frequently want of the latter may lose a high place, whilst good technique scores well. Very frequently a caustic, stinging criticism is softened down in order that we may not discourage an early worker. We have ourselves been through the mill, we know from an expensive and painful experience how heart-breaking it is to toil on unaided, with no helping hand to point out the errors, without encouragement to flounder about in a very sea of little known developers, which give rise to fogs innumerable and wretched results; and then to be told that what may be probably to us a fair print is only fit for the fire, makes matters worse. Therefore, we are rather more inclined to hold out a saving hand than give our despairing tyro's hopes a knock on the head and send him under, and make him put his apparatus on the market and get rid of it at a loss.



A CORRESPONDENT at Southsea has sent us a very fair print of an underground cellar, "100 ft. in length and 30 ft. in width, 15 ft. below the level of the pavement, stone vaulted roof, and perfectly devoid of daylight. The plate, Marion's instantaneous, was exposed by limelight, using a lantern with 4 in. condensers; the objective and tubes, etc., were removed. The light was thrown round like a search light. Ordinary R.R. 8 in. focus,  $f/8.5$ . Developed with hydroquinone, Thomas' formula, and intensified slightly with mercury." This method of using limelight is by no means new, but seems to be very little known. We have some very good portraits and groups produced in this way in 1887, and possessors of a lantern will find it of great assistance in the winter when evening work is almost essential.



Mr. F. E. Ives, of Philadelphia, U.S.A., the well-known experimentalist on the production of photographs in natural colours, will lecture "On Photography in the Colours of Nature," on Tuesdays, May 10th and May 17th, at 3 p.m., at the Royal Institution, Albemarle Street, W.

## NOTES ON ENLARGEMENTS.—VII.

### DEVELOPERS.

THE first essential for development is of course a developer, and for enlargements the old ferrous oxalate still stands pre-eminent as the best, and we think the most used, though many operators now use quinol or eikonogen, or a mixture of the two. The formula for a good all-round ferrous oxalate developer is given, and in the Appendix will be found the formulæ as recommended by the various manufacturers of bromide paper.

#### *Solution of Oxalate of Potash.*

|                           |     |     |     |     |           |
|---------------------------|-----|-----|-----|-----|-----------|
| Neutral oxalate of potash | ... | ... | ... | ... | 2,880 gr. |
| Citric acid               | ... | ... | ... | ... | 15 "      |
| Distilled water           | ... | ... | ... | ... | 25 oz.    |

#### *Solution of Ferrous Sulphate.*

|                         |     |     |     |     |           |
|-------------------------|-----|-----|-----|-----|-----------|
| Ferrous sulphate        | ... | ... | ... | ... | 1,080 gr. |
| Sulphuric acid          | ... | ... | ... | ... | 3 drops.  |
| Boiling distilled water | ... | ... | ... | ... | 7½ oz.    |

#### *Solution of Bromide of Potassium.*

|                      |     |     |     |     |         |
|----------------------|-----|-----|-----|-----|---------|
| Bromide of potassium | ... | ... | ... | ... | 480 gr. |
| Distilled water      | ... | ... | ... | ... | 10 oz.  |

To make the developer, add one part of solution of ferrous sulphate to six parts of oxalate solution, and a few drops of solution of bromide as a restrainer. In mixing the developer it is essential that the solution of iron be added to the oxalate, and not the reverse, or a thick yellow precipitate of ferrous oxalate will be formed. It is advisable to use distilled water for all solutions, or a precipitate of oxalate of lime will be formed, and the solution will be clouded, and both the oxalate and ferrous sulphate solutions should be distinctly acid to test paper. Another formula which we have used with success is the following:—

#### *One Solution Formula.*

|                           |     |     |     |     |           |
|---------------------------|-----|-----|-----|-----|-----------|
| Neutral oxalate of potash | ... | ... | ... | ... | 2,600 gr. |
| Citric acid               | ... | ... | ... | ... | 100 "     |
| Ferrous sulphate          | ... | ... | ... | ... | 975 "     |
| Boiling distilled water   | ... | ... | ... | ... | 20 oz.    |

Dissolve the oxalate in the water, and add the citric acid, and finally the ferrous sulphate, stirring till the whole of the latter is dissolved and a deep orange yellow solution is formed. For use one part of this solution is diluted with three parts of water, or preferably with the same quantity of the following solution, when it will be about equal in strength to that made by the first formula.

#### *Solution for Diluting Concentrated Developer.*

|                           |     |     |     |     |         |
|---------------------------|-----|-----|-----|-----|---------|
| Neutral oxalate of potash | ... | ... | ... | ... | 120 gr. |
| Distilled water           | ... | ... | ... | ... | 4 oz.   |

Another formula for a one-solution developer, which was suggested by Carey Lea, the well-known American scientist, is as follows:—

|                           |     |     |     |     |           |
|---------------------------|-----|-----|-----|-----|-----------|
| Neutral oxalate of potash | ... | ... | ... | ... | 1,600 gr. |
| Distilled water           | ... | ... | ... | ... | 10 oz.    |

Heat to the boiling point, and add

|                 |     |     |     |     |         |
|-----------------|-----|-----|-----|-----|---------|
| Ferrous oxalate | ... | ... | ... | ... | 500 gr. |
|-----------------|-----|-----|-----|-----|---------|

Stir till dissolved, and bottle whilst warm. Some ferrous oxalate may precipitate out, but this will have but little effect upon the action of the developer, which is a saturated solution of ferrous oxalate. Both the two latter methods were those first used, and have been gradually supplanted by the two-solution formula.

### FERROUS CITRO-OXALATE DEVELOPER.

This modification of the oxalate developer was suggested by Abney in 1881, his original formula being:—

|                           |     |     |     |     |         |
|---------------------------|-----|-----|-----|-----|---------|
| Neutral potassium citrate | ... | ... | ... | ... | 100 gr. |
| Ferrous oxalate           | ... | ... | ... | ... | 22 "    |
| Distilled water           | ... | ... | ... | ... | 1 oz.   |

The citrate of potassium is dissolved in the water by the aid of heat and the ferrous oxalate added, and the whole



allowed to cool. A more convenient method, however, which Abney suggested in 1882 is to make two solutions as follows:—

| No. 1.            |     |     |     |         |
|-------------------|-----|-----|-----|---------|
| Potassium citrate | ... | ... | ... | 700 gr. |
| Potassium oxalate | ... | ... | ... | 200 "   |
| Distilled water   | ... | ... | ... | 3½ oz.  |
| No. 2.            |     |     |     |         |
| Ferrous sulphate  | ... | ... | ... | 300 gr. |
| Distilled water   | ... | ... | ... | 3½ oz.  |

The solutions are mixed in equal proportions just before using. The citro-oxalate developer does not require any addition of bromide as restrainer, its action not being quite so energetic as the ordinary oxalate, but it gives a fine velvety black deposit with most papers.

Further notes on modifications and additions to the oxalate developer will be found in the Appendix.

#### PYROGALLOL DEVELOPERS.

Alkaline pyrogallol, having a great tendency to the production of unpleasant brown tones, and also from the difficulty of preventing stains, has never yet found much use for enlarging purposes, and therefore no formula will be given for this, although one or two workers have advised the same.

#### QUINOL DEVELOPERS.

Hydroquinone or quinol has been used with great success by many operators, but there is again with this developer a tendency to brown in the deposit, which is extremely unpleasant to some. We can recommend the following for black tones:—

| No. 1.                     |     |     |     |            |
|----------------------------|-----|-----|-----|------------|
| Quinol                     | ... | ... | ... | 154 gr.    |
| Sodium sulphite (recryst.) | ... | ... | ... | 437 "      |
| Sulphurous acid            | ... | ... | ... | 20 minims. |
| Distilled water, to make   | ... | ... | ... | 10 oz.     |
| No. 2.                     |     |     |     |            |
| Sodium carbonate           | ... | ... | ... | 1,300 gr.  |
| Potassium hydrate          | ... | ... | ... | 154 "      |
| Potassium bromide          | ... | ... | ... | 20 "       |
| Distilled water, to make   | ... | ... | ... | 10 oz.     |

Mix in equal parts, and dilute with three times the quantity of water.

Other formulae recommended by manufacturers will be found in the Appendix.

#### EIKONOGEN.

We have found the following formula satisfactory:—

| No. 1.                   |     |     |     |         |
|--------------------------|-----|-----|-----|---------|
| Eikonogen                | ... | ... | ... | 50 gr.  |
| Sodium sulphite          | ... | ... | ... | 50 "    |
| Distilled water, to make | ... | ... | ... | 10 oz.  |
| No. 2.                   |     |     |     |         |
| Sodium carbonate         | ... | ... | ... | 437 gr. |
| Potassium hydrate        | ... | ... | ... | 56 "    |
| Distilled water, to make | ... | ... | ... | 10 oz.  |

For use mix in equal parts, and add an equal quantity of water.

#### EIKONOGEN AND HYDROQUINONE.

The most satisfactory formula we have yet used is one suggested by Mr. J. T. Chapman, of Manchester.

| No. 1.                   |     |     |     |        |
|--------------------------|-----|-----|-----|--------|
| Quinol                   | ... | ... | ... | 40 gr. |
| Eikonogen                | ... | ... | ... | 120 "  |
| Sodium sulphite          | ... | ... | ... | 480 "  |
| Citric acid              | ... | ... | ... | 20 "   |
| Distilled water, to make | ... | ... | ... | 20 oz. |
| No. 2.                   |     |     |     |        |
| Potassium bromide        | ... | ... | ... | 5 gr.  |
| Sodium carbonate pur.    | ... | ... | ... | 60 "   |
| Sodium hydrate           | ... | ... | ... | 30 "   |
| Distilled water, to make | ... | ... | ... | 20 oz. |

Mix in equal proportions, and add an equal quantity of water.

## Letters to the Editor.

### A SUGGESTION.

SIR,—The suggestion I desire to make is that gentlemen who love photography for its pleasure both to themselves and their friends, and who are sufficiently generous towards others as to desire them to learn that which they already know, should be willing (either in an already established camera club or otherwise) to devote a little time to the earnest beginner by developing for him a plate or two, so that he might practically find out how far to carry this process. Handbooks give advice, truly, but how vague! and many plates are spoiled by the tyro in an endeavour to reach the goal.

This spoiling of plates disheartens many an one, and thus photography loses another student, who might possibly develop himself into a true artist, and all for a kindly hand at first.

Take East London, for instance; we have the "People's Palace" here with its Society. But membership is confined to students of certain classes; why should this not be open to all who possess the desire to study photography itself, apart from other subjects, *without a prohibitive fee*? The aim of the original scheme was the betterment of the working classes, who cannot afford high fees for their "hobby," and therefore my suggestion is, I think, pertinent. And so in other places. A practical demonstration in our clubs, with novices invited, would, I think, do much to prevent them from going to pieces, as several have done lately, for these new enthusiasts, feeling the benefit of practical advice, would in some instances join the club and thus keep it going.

Trusting some of the experienced amateurs will take kindly to this suggestion, I am, sir, yours truly,

A NOVICE.

\* \* \* \*

### THE BLISTER FIEND.

SIR,—I have just left off toning, and my soul is disquieted within me. I fully believe "where ignorance is bliss, 'tis folly to be wise," but when it comes to blisters, is it not time to get rid of our ignorance? I am no chemist, therefore I can only ask questions or make a suggestion. But at getting blisters on albumenised paper I think I may style myself an expert, and this mostly on paper "better than best." I have most carefully tried the many ways for preventing them, but the cry is "still they come." I think it is a fact that a blister is caused by some sort of gas or air getting in between the albumen film and the paper. Then, I imagine that if that gas or air could not get in blisters would go out of fashion. Where does the air get in? As the film seems to be air-tight, I suppose it is through the paper, being, as I reckon, more porous or absorbent. Then how would it be to coat both sides of the paper with albumen, or the back with something to keep out the draught? The fact that blisters appear more on double albumenised than on single seems to point out that the double film is more air-tight than the single, so (supposing the paper to be the same in both cases) it shows that the air when it gets through at the back has less resistance to meet with on the single film, thereby showing that a single film is slightly porous, so that paper coated on both sides, as above suggested, would have to be done equally, that is to say, if a double film on front, would require a double film at the back.

I also imagine paper so treated would not behave so much like a clock spring. Hoping a better pen than mine will take up the matter, I am, sir, yours truly,

H. S. LARGE.

\* \* \* \*

### MONTHLY COMPETITIONS.

SIR,—You were good enough to insert a letter from me in your issue of the 22nd April, in which I invited discussion on the merits of certain photographs reproduced, namely, Nos. 2, 4, and 5. In that letter I severely criticised No. 2, hoping that it might have led to a battle on art, that it might do good to the ever-increasing number of workers in your competitions; but this, I am sorry to say, I have been sadly denied.

Is there only one fault in my letter, is there only one person to find that fault, and this person none other than Mr. Harman Orr himself, who stoops so low as to seek protection under the cloak of a grammatical error? Poor contribution, that it should seek such a covering and one so thin! Willingly would I sacrifice a thousand such errors for a single lesson in art, for it is for art I hunger. I will let your numerous readers retain their silent opinion on the reply to my letter.



But, Sir, are we not drifting when we find in the AMATEUR PHOTOGRAPHER a letter on grammar? Am I to gather from the silence in your last issue that my criticism was a fair one? Surely, if it was unjust I should now have been in a position similar to the mouse under the paw of the cat.

Well, as no one has come forward to comment upon the merits of the photographs I criticised, more especially No. 2, it places them in a very awkward position. But, Sir, let it now pass, let technical defects have their due consideration, but never at the expense of art. As unsuccessful competitors, we look to the reproductions in the AMATEUR PHOTOGRAPHER as a guide for future work. When Mr. Harman Orr takes the Silver Medal, which I sincerely hope he will, let his print at least teach poor me a lesson, and whatever expression he might think fit to introduce, let it "form part of the meaning of his photograph." Rather would I not have seen No. 3 reproduced at all, than to see it placed second to No. 2. The interest in No. 2 is by this time dead, but the interest and lesson to be learnt from No. 3 will never die.

Sir, I take great interest in these competitions, whether I enter them or not. Not that I gather much from the criticisms; but I take a great delight in analysing the reproductions.

Let me congratulate Mr. Dundas Todd on his fine production, but above all Mr. J. W. Evans under the trying circumstances.

I thank you, Sir, for allowing me to be the cause of taking up so much of your valuable time and space; but I hope that it will at least inspire some amateurs to study the art side of photography more, and so by our works return our thanks to that great teacher of art photography of whom the world might for ever be proud.—I am, etc.,

WILLIAM McEWEN.

SIR,—I have thought for several months some alteration would have to be made in the way the competitions are managed, the quantity of entries having so largely increased; and I fancy that a large proportion are far below exhibition or competition form.

I have the idea that the fact of being accepted as a competitor should be the first step towards the prize, and I propose that the 200 or more entries be each weeded down to say 50, the remaining 150 either being returned or disposed off in some other way, the selected 50 to be again divided into three sections; the first 10, the second 15, and the third 25; the whole 50 to be criticised. Such a plan would save you time and trouble, make it more of an honour to be in either the 10, 15, or 25, give more room in your paper, and be a vast improvement altogether.

My idea is, that the fact of being in the 50 will give a status, and the higher towards the prize we get, so much the better, it being understood that from 1 to 50 being the order of merit in any particular event.—I am, yours, etc.

W. T. TUCKER.

SIR,—I think it would be a great improvement to classify the photographs sent in to the competitions as you suggest, and to give a longer criticism of those reproduced, pointing out more fully where and why they excel, after the manner of the gentleman who discovered artistic merit in two old cart ruts, but perhaps not quite so poetically. But you may depend that even the third-class competitors will expect some reference to their work, or they would not trouble to send it in, and as they are, no doubt, anxious to improve, I suggest that in their case all the usual particulars should be cut out and just a few words of advice given.—Yours truly,

JAMES A. BOOTH.

SIR,—I have just read your leaderette with reference to Monthly Competitions and your difficulty to cope with the ever-increasing number of exhibits.

I think if the prints were divided into classes as you suggest, and only the first, or first and second, criticised, it would make the criticism more valuable, and I for one would not object to the eloquent silence if my pictures did not deserve any comment.—Yours truly,

BERNARD LINTOTT.

SIR,—In the AMATEUR PHOTOGRAPHER for April 29th, just received, I note the paragraph referring to Monthly Competitions. I think your idea of dividing the prints into three classes exceedingly good, and trust that other readers may agree with me in this.

I see by the list at the end of this week's number that 232 prints have been entered. This means a lot of work for you, and the criticisms must necessarily take up much valuable space. Besides, as you very rightly remark, the criticism (except of the photographs reproduced) can be of no possible interest to any one except the individuals concerned.

Therefore, if I do not see any mention of any prints I may have been bold enough to send to competition, I shall quietly retire into private life, until I can produce something decidedly better. I trust you may receive freely the views of your numerous readers throughout the world.—Yours, etc.,

STANLEY C. BRIGHT.

SIR,—I have been much interested in the correspondence under the above heading, and now beg to offer a few suggestions of my own. In my opinion Nos. 1, 2 and 3 are quite correctly placed, but Nos. 4 and 5 ought to be reversed. As to No. 6, it is vastly inferior to No. 5, and there is quite a gap between this and the rest of the successful ones. I also think that though much fault has been found with it, Mr. Harman-Orr's picture is technically as good a picture as could be produced of so difficult a subject. Hoping you will find room for these few lines, and thanking you in advance for having done so, I am, etc.,

F. DE W. BATTY.

## Reviews.

*Annuaire de la Photographie pour 1892.* By Abel Bugnot. Société d'Éditions Scientifiques. Place de l'École de Médecine, 4, Rue Antoine-Dubois, Paris. Price 2 fr. 50 c.

A very useful handbook, containing a complete list of the French photographic societies, their members, dark-rooms, and publications, English and foreign being alike included in the latter list.

*A Guide to Electric Lighting.* By S. R. Bottone; published by Whittaker and Co., 2, White Hart Street, Paternoster Square, London, E.C. Price 1s.

The author of this handbook is so well known from his other works on electricity that one is led to expect a clearly written practical exposition of the subject in question, and after a careful perusal of the work we can say that no one will be disappointed in it. Mr. Bottone assumes utter ignorance of the subject on the part of his reader, and leads him by easy gradation from the initial considerations of what electricity is—the simple cell batteries and little glow lamps—to the most expensive and efficient motors and arc lamps. Technicalities and abstruse terms are conspicuously absent, or when used, clearly explained, and the book is one likely to become as popular and useful as "The Dynamo," "Electric Bells," etc., by the same writer. The book is well printed and illustrated, and will form a welcome and useful addition to the library of the amateur.

*Jahrbuch für Photographie und Reproduktionstechnik für 1892.*

Edited by Dr. J. M. Eder. Published by Wilhelm Knapp, Halle a/S. Price 8s.

For the last four years Dr. Eder's Jahrbuch has undoubtedly held its own in the premier position of all photographic annuals published in all languages, not only for its illustrations, but also for the quality of its matter. This year it is larger than ever, containing 500 pages of letterpress and thirty-three whole-page illustrations of high class, besides numerous illustrations and diagrams in the text. The summary of the progress of photography occupies 200 pages, and becomes a valuable addition to the past year's library, as in it we have practically a concise précis of all that has been proposed in the leading journals bearing upon photography, and accompanied by notes by the Editor. A few of the names of the contributors are sufficient proof that we have something more than a mere olla podrida of padding, or inane and useless articles, the leading writers being Albert, Augerer, Bothamley, Professor Cornu, Gaedicke, Heseckel, Himly, Husnik, Just, Lainer, Miethe, Neuhess, Pizzighelli, Schumann, Valenta, Vidal, Vogel, Volkmer, Waterhouse, Witt, and Zettnow, all men who have made their mark in particular branches of our science, with a very good sprinkling of many men of less note.

It is impossible in a brief review to give the gist of all the leading articles, but we shall hope to do so in subsequent pages of our paper.



## Elementary Photography.

By JOHN A. HODGES.

### CHAPTER XIV.

#### BROMIDE PRINTING.

The Advantages of the Process—The Negatives Required—Description of the Process—Working by Artificial Light—Artistic Recommendations—Colour—Surface—History—Commercial Papers—Printed Instructions—Advice—Accuracy of Exposure Essential—How to Obtain Uniformity of Results—Procedure—How to Ascertain Correct Exposure—A Suitable Non-actinic Light—Development Described—Clearing—Fixing—Washing and Drying the Prints—Printing from Thin Negatives—Result of Error in Exposure—How to Correct Over-exposure—Colour of Prints—Final Caution.

BROMIDE printing is a process which specially commends itself to the requirements of the amateur, for the reason that better results from injudiciously exposed negatives are obtainable from it than from any other. The finest results are, of course, as with other processes, only obtainable from the most suitable negatives, and it may be well to at once describe the kind of negative which should be aimed at when printing on bromide paper is contemplated. The most suitable negative for the purpose is one that is rather thin—a little less vigorous, in fact, than would be considered necessary for printing on albumenised paper—and it should not show any harsh contrast of light and shade, nor any hard patches of undue density; but really passable prints may be obtained from negatives which are absolutely too thin to print by any other process. In many cases, indeed, when such negatives are obtained, it will be advisable to reserve them for printing from in bromide, rather than resort to intensification, which should be avoided whenever possible. Reasonably good prints may also be obtained from negatives which exhibit the converse conditions to those just described, that is to say, from those which are unduly dense. How the best results may be secured under these varying conditions I shall in the present chapter endeavour to make clear.

Bromide printing is what is known as a development process—that is to say, the image after exposure to light under the negative, is not visible as it is when albumenised paper is used, but requires to be developed in order to bring it out. This leads me to refer to a further advantage of the process, namely, that the whole of the necessary operations, including the exposure of the paper, may be carried on at night, independent of the assistance of daylight. This is no small advantage to the amateur whose time is fully occupied during the day, as it will enable him to produce his prints at night.

From an artistic point of view the process has much to recommend it. In appearance, a properly produced bromide print closely resembles an engraving, its colour being a good black, although, by a subsequent process of toning, this black colour can be easily changed to various shades of red and brown. For this reason the process is preferred by many people (particularly those who profess artistic ideas) to silver printing either on albumenised or gelatino chloride paper.

Gelatino-bromide paper is manufactured commercially by several firms, but Morgan and Kidd were the first to issue the paper to the public. I have used their paper from the time of its introduction, and do so still, not having met with any which is better. My remarks, however, will apply equally to this particular paper, or to that of any other maker, for, except in the matter of rapidity, there is really

very little to choose between the different makes. Whatever paper is selected, the printed directions accompanying it must be most carefully read and studied before any attempt is made to use it, as each different make will require some slight difference in treatment, which, though it may appear trifling, will in reality have a great deal to do with the final results; moreover, it is only fair to the manufacturer, who should know what particular method of working suits his productions best, to obey his instructions. Although the hints which I am giving apply generally to all bromide papers, they are not intended to in any way supersede the printed instructions accompanying the packets.

Accuracy of exposure is of primary importance, and the factors which determine it are the same as in other photographic work. In order to obtain uniform results in this respect it is necessary to observe two precautions, first, always to use the same source and intensity of illumination; and second, always to place the printing frame during exposure at the same distance from the light. Then, when once the correct amount of exposure has been ascertained for a particular negative, a note can be made of the time, in a book kept for the purpose, so that at a future time any number of prints can be produced with ease and certainty.

The source of light may be either gas, oil, or candle; it does not matter which, though on the score of convenience perhaps gas has some advantage. Whichever be employed the light should stand on a mark on the table, or bench, and the printing frame be placed at a given distance from it—two feet is a good average distance. Correct exposure can only be learnt by experiment, but working under the fixed conditions which I have prescribed will render it a tolerably easy matter to ascertain. The quickest and easiest way of finding out the proper amount is to give a graduated exposure to the negative in the manner which I will now describe.

One of the packets of bromide paper is opened in the non-actinic light of the dark-room, and a sheet of the paper laid, coated side down, on the negative in the printing frame; the sensitive side may be known by its tendency to curl inwards; the back of the frame is then replaced, and the frame itself placed at the two-foot mark from the light. All but one-third of the negative should be covered up by a piece of card larger than the frame, the light turned up, and an exposure of say five seconds given, the card is then moved so that two-thirds of the negative is uncovered, ten additional seconds being counted, when the card is completely withdrawn, a further ten seconds being allowed. We shall thus have given three different exposures to the same print, so that, although this print will be valueless from an artistic point of view, we shall be able upon development to see which exposure was most nearly correct.

To work bromide paper successfully, one must use non-actinic light of a suitable character. The paper is very much less sensitive than an ordinary dry plate, therefore light of a very different character may be employed; ruby light is unsuitable and unnecessary. Good yellow light, and plenty of it, should be used. I find the ordinary yellow fabric sold for about 9d. a yard to be the most suitable material to employ. In fact, the light should be such that the print of an ordinary book may be read with comfort by it.

The most suitable developer for bromide prints is the ferrous oxalate. Hydroquinone is recommended by some workers, but it is not one that I can advise the beginner to employ, as with it there is a great tendency to obtain results of a "soot and whitewash" character. The developer, as ordinarily employed, is made by adding one part of the saturated solution of sulphate of iron to six parts of the saturated solution of oxalate of potash (the iron must



always be added to the oxalate, or a precipitate would result), but in my own practice I slightly modify this strong developer by adding to it an equal bulk of *distilled* water, my plan being to give a rather full exposure, and develop with a solution well restrained by dilution with water. I have given a very great deal of attention to the development of bromide prints, and I have found that this treatment of the paper generally gives the finest results. The image comes up slowly, and density is not acquired so rapidly as when the concentrated developer is used. The development is consequently more under control, and can be more easily arrested when the desired effect is obtained. The gradation of the prints, too, is very much better than when the ordinary method is followed.

Development is carried out in the same manner as with a plate. The exposed paper is placed in a clean porcelain dish, which must not be used for any other purpose, and the developer applied to it in an even wave. If sufficient solution is used this can be easily done. About 2 oz. should be sufficient for a half-plate tray or dish. It is sometimes recommended to wet the paper before applying the developer, but this frequently causes bubbles, and also, if ordinary tap water is used, a deposit or precipitate all over the film. The dish must be rocked so as to cause the developer to flow backwards and forwards over the paper. The development of the image will be gradual, and even if the exposure has been incorrect, with the dilute developer recommended, the image will never rush up, as is sometimes the case when normal solutions are used, unless the exposure has been very excessive. The print should be allowed to develop just a trifle denser than it is required to be when finished, as there is a little reduction of density in fixing. It is important to arrest development at the right moment, and without hesitation. The solution, therefore, must be poured off into the measure promptly, and about 2 oz. of clearing solution, composed of acetic acid  $\frac{1}{2}$  oz., water 60 oz., poured over. This will at once arrest development, and will remove any deposit of iron from the pores of the paper. Its use should never be dispensed with, or impurity or yellowness of the whites may result. The prints may remain in the solution about two minutes, when they must be thoroughly washed, to remove all traces of acid, before being transferred to the fixing bath, which should be composed of hyposulphite soda 2 oz., water 10 oz. After two hours of thorough washing they may be removed, and hung up by one corner to dry. The surface being gelatinous, they must not be dried between blotting paper.

In concluding this chapter I will refer to one or two matters of detail which may assist the novice in securing good results.

First, as to exposure; very thin negatives should be printed with a weak light, dense ones with a strong light. Excessive exposure will produce a grey-looking print without contrast; under-exposure will, on the contrary, give very great contrast and an absence of detail. Over-exposed prints may possibly be saved by further diluting the developer with water, and adding one or two drops of a 10 per cent. solution of bromide of potassium. Development is much faster in hot weather than in cold, and the time occupied in developing will have some effect upon the result, for prints which take a long time to develop will appear hard, while those that develop quickly will be soft. The best colour can only be obtained by giving a correct exposure. Perfect freedom from contamination with other chemicals is of primary importance in bromide work; the least trace of hypo or pyro would be fatal to good results, and indelible stains would be produced.

(To be continued.)

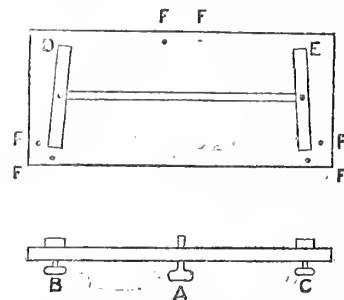
## A SIMPLE METHOD OF CONVERTING AN Ordinary Quarter-Plate Camera INTO A Stereoscopic Camera.

By W. A. WATTS, M.A.

OF late years the stereoscope, with its twin picture, has come into renewed favour, and doubtless many amateurs would be glad to produce these charming illusions—especially as the same negative which is suitable for them is equally suitable for the popular lantern slide—could they do so at small expense. At all events, many will not commit themselves to the somewhat (perhaps unnecessarily) large expense of a special stereoscopic camera until by some preliminary experience they have acquired a liking for the stereoscopic art. Of course, an ordinary half-plate camera can easily be converted into a stereoscopic camera, providing it has a sliding front, and sufficient width of front, like Lancaster's International, by simply removing the sliding front, with its half-plate lens, and substituting one, which may be home-made (cigar-box wood answers very well), with twin quarter-plate lenses.

In this case the camera requires a moveable diaphragm, which may consist of a piece of black twill, or better, india-rubber cloth, hooked on by elastic to two tiny hooks in the inside front of the camera, and two corresponding ones at the back, top and bottom. In printing a negative so produced the two halves require to be transposed. Even this conversion is not, however, to be accomplished without expense, as the purchase of two quarter-plate lenses will cost from 10s. to £2 2s., according to quality, or even more if the lenses of the more expensive makers are employed, though Instantograph lenses would answer perfectly.

The possessor of a quarter-plate camera only cannot, however, adopt this method, but he can at a very trifling expense adapt his camera for stereoscopic purposes by a method about to be described. I cannot claim this device as original, as I was myself the possessor of a camera constructed on this plan as long ago as 1857, the days of the collodio-albumen process, which camera, along with the negatives produced by its aid, have long since, alas! become things of the past. As I have not seen this method described in any recent publication, I think it may be novel to many



readers of the AMATEUR PHOTOGRAPHER. All that is required in the way of additional apparatus is a sliding baseboard to take the place of the ordinary tripod head. Mine, which is adapted for use with an International, consists of a piece of half-inch mahogany, 9 by 4 in., as in the above diagrams, in which is plan from above and elevation.

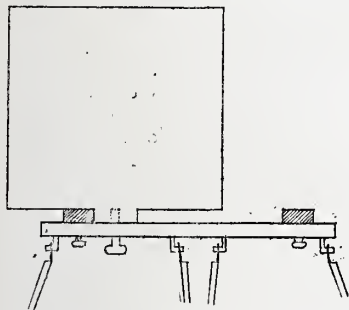
It would be better still made  $\frac{1}{4}$  in., with cross-grain strips at the ends to prevent warping, like a drawing board. Along the central line runs a slot  $7\frac{1}{2}$  in. long for the camera screw (a) to slide along, and at each end is a guide strip (d, e), half-inch wide, three inches long, and about one-eighth of an inch thick. These are tightened by screws (b, c), from underneath, working in a screw bush in centre of guide piece. The guide strips may equally well be made of brass. On the under surface are attached screw hooks, the positions of which are indicated by dots (f, f) or blocks, in each end of which is inserted a pin according to the kind of three legs for which it has to be adapted. The baseboard, of course, takes the place of the tripod head, and as some of these are attached to the legs with an outward spring, whilst others have an inward spring, it is impossible to lay down a general rule.

The International legs spring outwards, and screw hooks are easiest fitted to them; whereas the Instantograph legs spring inwards, and can easily be attached to a block with pins at the ends, or screw hooks may also be used, the projecting parts outwards.

As the width of the camera will be too great to allow it to be placed bodily between the guide strips, and still leave enough space to shift it four and a half inches, which is found about the



best distance, it may require a square piece of wood the exact thickness of the guide strips, attaching by four small brass screws, and having a screw bush to take the tripod screw. The size of this piece of wood may be three inches square. It may, however, be narrower, say  $1\frac{1}{2}$  in. by 3 in., in which case the length of the slot, and therefore of the baseboard, can be reduced, as the length of the slot only requires to be  $4\frac{1}{2}$  in. more than the width of this attached piece. If, however, the camera, like the "International," has a sliding piece to fix it when opened, it needs no further addition, as this sliding piece, particularly if filed square at the two sides, serves to lay the camera accurately against the guide strips, and the dimensions given above are suitable to the "International." The appearance of the camera upon its baseboard is shown in the following diagram.



The mode of working is very simple. Set up the baseboard with its three legs (it may even be attached to the ordinary tripod head, but then the camera requires an additional screw, and will not slide from one end to the other, but must be unscrewed and replaced); then attach the camera. Loosen both guides, and bring the camera up against one at one end, focus and adjust so that some definite object comes upon a central line ruled on the ground-glass. Then tighten the guide strip, so that the camera may again be brought exactly into the same position; slide the camera to the other end, and repeat the process, taking care that the same point is on the ruled line. Expose one plate of the dark slide at one end, then slide back to the other position, and expose the other for exactly the same time. Upon being developed, the two negatives will differ by just the right amount to produce, when printed, the two halves of a stereoscopic slide, or of course either of them is available for a lantern slide, etc. It will be best always to make a practice of starting at the same end, say the left, so that No. 1 (or other odd-numbered) plate shall always represent the right-hand half, and No. 2 (or even-numbered) plate the left; also to take the pictures upright, as when finished they will require to be less than  $3\frac{1}{2}$  inches wide, and if they were each  $4\frac{1}{2}$  inches would require a great deal cut off each end and so spoil the composition; whereas, when taken upright, they can either be left full height and mounted on a half-plate, or by being made  $3\frac{1}{2}$  inches, most pictures are improved by something being taken off either foreground or sky. Better still, have a  $3\frac{1}{2}$  inch square ruled on the ground-glass, and keep the composition within that, so as to ensure its suitability for a lantern slide. One advantage of this plan of taking stereograms, is that the right-hand plate gives the right-hand print, and the print does not require to be cut and transposed as in the ordinary twin-lens camera. On the other hand, there is the disadvantage that it will not, of course, be available for moving figures, as they will have changed their positions entirely before the camera can be placed at the other end of the baseboard. Against this drawback must be put its great cheapness, as no new lens is required, and the cost of the baseboard is very trifling; and its adaptability to any existing camera, without in any way interfering with its ordinary uses. It might even be used for a half-plate whose front does not permit the twin lens, by so altering the dark slide (as by a double shutter working from each end, or a sliding cover of ferrotype) as to allow the covering of one-half the plate whilst the picture is taken on the other half, and then reversing. This of course would require two fiducial lines, one on the centre of each half of the ground-glass.

It should perhaps be noted that the theoretical amount of shift of camera is only  $3\frac{1}{2}$  in., as that is the distance apart of the centres of the two twin lenses, but it is found that  $4\frac{1}{2}$  in. gives better stereoscopic effect without exaggeration. The prints, however, must be so trimmed that when mounted the centres are not more than  $2\frac{1}{2}$  to  $2\frac{3}{4}$  in. apart. Inattention to this point very often produces the difficulty which some persons find in combining the two pictures, as seen through a stereoscope, into one, so much so that there are many persons who, though they have looked through a stereoscope many times, have never in their

life seen a stereoscopic picture. As described, this baseboard can easily be constructed by any amateur for himself, but I imagine that if any of the popular camera makers would construct them and advertise them at a moderate price, they would have a large sale. I throw out the hint for what it is worth, as there is no patent right preventing them for doing so; at the same time, if anyone should try the experiment and meet with a startling success, should his conscience lead him to offer me a commission on the sale, I should not feel in the least insulted.

If any amateur is led to construct and try one of these baseboards, perhaps he may find it a useful addendum to describe a home-made stereoscope, at the cost of one penny, which acts as well as the more expensive ones. All that is necessary is to take a magnifying lens of about 1 to 2 in. in diameter and 6 to 7 in. focus, and get the glazier to cut it across the middle so as to make two halves. Mount then these two halves underneath two round holes in a strip of cardboard  $2\frac{1}{2}$  in. apart with the narrow edges towards each other, thus > <, and attach to it at right angles a piece of blackened cardboard, half-way between the lenses and about 4 in. long, to limit the vision of each picture to its own eye, and the deed is done. There used to be sold stereoscopic spectacles like an ordinary folder, each eye containing a half lens ground into an ellipse. These were very convenient, but require the hand interposing to form a diaphragm. If the cardboard stereoscope just described is neatly shaped into an oval, with an eye shade tacked round, and is attached to a wooden rod on which slides a wire holder for the picture so as to adjust the distance, and a handle screwed into the wooden strip, we have the very convenient and inexpensive American stereoscope, one of which I purchased in America seventeen or eighteen years ago and brought back to this country, but which I believe is now being introduced commercially.

## Stereoscopic Photography.

A REPLY TO MR. J. C. ANNAN.

PROMPTED by a desire to introduce a discussion, viz., "to inquire into the reason for the present revival of stereoscopic work amongst the photographic fraternity," Mr. J. C. Annan made a communication to the Glasgow Photographic Association a few days ago, and which was published in your columns last week. I see by the report that the discussion which followed was "animated," but it is a pity the "animated discussion" has not been published. But let us consider what Mr. Annan has said.

We are told there are several classes of photographers, and these Mr. Annan divides into three. "The first is the professional, who does stereoscopic work to satisfy an eager public demand to buy them for the entertainment of their friends in the drawing-room." Well, now, from a professional standpoint, is this not one grand testimonial to stereoscopic photography, and the fact that there is an "eager demand"? That they suit the public taste is another point in favour.

The next class of photographer, Mr. Annan says, is the amateur, "who photographs because he desires a relief from the monotony or worry of his daily avocation, etc., and this class hail stereoscopic work as a delightful variety, and *naturally* become enthusiastic over it." (Italics mine.) "They rephotograph many old views, and show their results to admiring friends, who expatiate on the marvellous reality of the appearance."

Now, I ask again, is this not another point in favour of stereoscopic photography, or are all our "admiring friends" devoid of taste, without soul or artistic feeling, humbugs, or idiots?

The third class of photographer, we are told, photographs for results; they have a soul beyond the dark-room. "Their albums are the real end of their work; they like to have pictures of places visited to remind them of a happy holiday, and to be able to illustrate their private and public lectures to less fortunate brethren." Now, in the name of goodness, cannot all this be done from stereoscopic negatives? "A wave, a cloud, the outline of a hill, or a tree branch, is ever a pleasure to them." What nonsense all this attempt at poetry or art is, to be sure. The stereoscope will show the wave, the cloud, or the branch of a tree far better than most pictures to be found in albums. Before we try to be poetical in photography, we had better be practical. Then, the albums of ninety-nine out of every hundred amateur photographers are not fit to be seen; they are as a rule the receptacle of early efforts and prints that are not good enough to mount in any other way, though sometimes an album



may contain reminiscences of holiday rambles; and we can do all this by printing from one end of a stereoscopic negative.

I have before me as I write a stereoscope and a box of fifty stereoscopic slides (glass transparencies) made from negatives taken on a holiday tour. Near the box is an album, containing fifty platinotype prints (quarter-plate size), printed from one end of the same stereoscopic negatives. My friends who visit me have, I believe, the average intelligence of the human race, and dozens of times I have experimented upon their tastes by giving them first the album to look through, and generally in five or six minutes they are satisfied; but the very same persons will often spend as much time looking at one stereoscopic slide, and sometimes longer, if I don't hurry them along, and, when these same friends revisit me, they ask to see my stereoscopic transparencies again; but they never ask to see the album at all. Now, how is this? Let us see what Mr. Annan says again.

In the first place, he submits, "it is impossible to appreciate the artistic qualities of a photograph through any mechanical contrivance, and that to enjoy a work of art the mind must be untrammelled by anything outside of it, for the disturbance created by the necessary fixing of the parts, the adjustment of focus, etc., is a source of irritation which prevents the enjoyment of the beauties of the picture;" and these things are the initial objections of Mr. Annan to the stereoscope.

Now, it is a fact that, in the old days of the stereoscope, thousands of slides were made so very incorrectly, and these, when viewed by stereoscopes, which were equally defective, caused considerable trouble, and undoubtedly did represent natural objects in a very unnatural way, as stage set-scenes or little models.

But all this wrong-doing of the past need not be repeated. There is no necessity for this "fixing" and what is usually understood (erroneously) to be "adjusting the focus." I say again, with emphasis, that with correctly printed slides and properly constructed stereoscopes there is no occasion for any trouble or irritation such as has been mentioned.

But there is a fourth class of photographer not mentioned by Mr. Annan whom I must now introduce. This class of photographer has a propensity for doing things without thinking, and for talking and writing about art, atmospheric renderings, optical, and other matters of which they have but a very limited understanding, and it is such gentlemen whom the student in stereoscopic photography has most to fear in leading them astray.

Mr. Annan asks us "to imagine an artist painting a picture of a view which he looked at through a telescope." Now, this is a remark quite misleading, for it has no bearing whatever on the stereoscope, but might well be applied to taking single pictures with a lens of too long a focus.

Mr. Annan says: "In nature it is impossible to see objects near at hand and objects at a distance in focus the same time; in the stereoscope, however, the several planes are all seen in focus at once, and thus the effect aimed at by one means is directly annulled by another, with the result that the various planes seem flat portions supported by a little space from each other."

Here we have an instance of the fourth class of photographer whom I have introduced in this short article, and where a little learning is shown to be a dangerous thing. In the first part of the above paragraph Mr. Annan is correct, but in what he says he sees in the stereoscope he is all wrong.

"Focus," or the "several planes seen in focus at once," has nothing whatever to do with the subject. If we look at a natural object five yards away, and then turn our attention to another object fifty yards beyond, we undoubtedly alter the focus of our eyes; but this alteration of focus gives us no idea or appreciation of distance.

It is a fact that "the mind can only concentrate itself on one object at a time," but it is incorrect "that, if an endeavour be made to look at a near object and at a distant object together, it will be possible to do so."

Next, we are treated to some incoherent remarks about atmospheric impressions, and what the painters do, and to which I need not reply further than to say that, if it be possible to obtain atmospheric effects in a single photograph taken by one lens, surely it is equally possible to obtain similar effects in two other pictures made by two other lenses. Then, as I have previously stated, if these two other pictures have been rightly taken and placed in the stereoscope, it matters not whether the subject be atmospheric effects or aerial grandeur, mountain or foreground, *with all on one plane*; this plane, so far as focus is concerned, has nothing whatever to do with the distance-giving power.

It is the varying convergence of the axis of the two eyes that enables us to estimate distance in natural objects, and, when the stereoscopic slides and stereoscopes are made and used correctly, it is possible to appreciate the relief, distance, and perspective due to nature a thousand times better than from any single picture.

W. I. CHADWICK.

## A New Cheap Commercial Process

FOR THE

### Manufacture of Oxygen

(PARKINSON'S PATENT).

THIS process has been devised for the purpose of extracting oxygen from the atmosphere and supplying it compressed in steel cylinders in a high state of purity for commercial and other purposes for the use of comparatively small consumers, and for the erection of complete plants, on which a small royalty is charged, when large quantities are regularly required.

The experiments were aimed at finding, if possible, a substance which would be unaffected by moisture or carbonic acid, and which, being in a highly porous state, would readily permit the air when passed over it, as subsequently explained, to permeate the mass thoroughly and come in contact with every possible portion of the chemicals. It was found that these conditions were best satisfied by the use of permanganate of potash prepared in a special manner. Baryta has hitherto been largely used for the preparation of oxygen, but possesses disadvantages, which in seeking a fresh substance it was the desire to avoid.

It is well known that when quick lime comes in contact with moisture a great amount of heat is evolved in consequence of the lime absorbing the moisture and passing from the state of oxide to that of hydrate, so much so, in fact, that it had been known to cause organic substances to char or even take fire, and hence when required to be conveyed in large quantities from place to place in ships or by other means of conveyance, special regulations have to be made to overcome the risk of fire. The oxide of baryta, as used for the production of oxygen, possesses the same characteristics as lime in this respect, though in a much greater degree. In consequence of its avidity for moisture being so intense, the utmost precautions have to be taken where it is the substance employed, to extract all possible moisture from the air previous to its passage over the baryta, the resulting effect, if this is not thoroughly done, being that the lumps or fragments of baryta gradually unite or solder together into large masses of considerably less porosity than they originally possessed, and which are also chemically spoiled in the same proportion as they have imbibed the moisture, and even when the greatest care has been exercised this drawback is experienced more or less.

By making permanganate of potash the agent employed to effect the separation of the oxygen from the atmosphere, it is found entirely unnecessary to take any precautions to dry the air before passing it over the chemicals, as the moisture in no way deteriorates them. As it is of the greatest importance that the active reagent should be in as porous a condition as possible, we found, as a result of numerous experiments, that an excellent result was obtained by intimately incorporating the very finely-powdered permanganate of potash with from twelve to fifteen per cent. of its weight of a good quality of kaolin, or china clay, then working up the same into a suitable consistence with water, and dividing the mass into pieces about the size of a walnut, which are then carefully dried, by the aid of a vacuum, in a vessel, the temperature of which is very gradually raised at first and slowly increased till it reaches 100 deg. C., or even somewhat higher. By this means the composition assumes a highly porous and spongy state, combined with a solidity and firmness which enable it to be readily handled and transported as required without falling to pieces or crumbling.

To accomplish the effectual operation of the process, the chemicals as above prepared are placed in a series of special retorts, which are suspended from the roof of a gas furnace. The chamber in which they are placed in the present plant has a capacity for and contains five retorts, one of which, however, serves as a superheater for the air, as will be presently explained, the remaining four being charged with chemicals. The design adopted is a new departure, the individual capacity of each retort being probably twelve times that of those adopted in other processes. The retorts are made of cast-iron, and each forms practically a large U tube, having an internal pipe or flue in each limb of the U in a vertical direction, extending from the lower end to the upper, the hot gases of the furnace having free passage through this flue, and so ensuring the heat of the furnace being readily communicated to the whole of the chemicals contained in the retort, each one of which (as at present made, but



which, of course, can be further enlarged if found desirable) will hold about seven hundredweight of the permanganate compound. The conduction of the heat into the heart of the chemicals is further facilitated by having a number of parallel projecting belts or rings, at suitable distances apart, round the circumference of the retort, and also a number of other projecting or conducting metal pieces, which assist by conveying the heat to keep the whole at a uniform temperature, and also act as strengthening pieces to the retorts. The temperature required in the furnace to insure good results is found not to be higher than a dull red, and insufficient to cause the retorts to be injuriously affected either by the heat or oxidation consequent thereon during long periods of time. The whole process of causing the chemicals to absorb the oxygen from the atmosphere and to subsequently evolve the same is automatic in its action, with the exception of the firing of the furnace and boiler.

The arrangements and machinery employed to effect the results are as follows:—On the top of the furnace and resting on substantial girders, which also form the supports from which the retorts are hung, are fixed on opposite sides two sets of compressing and vacuum pumps. These pumps, being thus placed, are in close proximity to their work, thus dispensing with a large amount of communicating piping, and, therefore, in like proportion diminishing the risk of dilution of the oxygen produced by residual nitrogen in this piping. But the one great advantage is gained by the use of the large retorts, as only sixteen lids and pipe joints at the mouths of the retorts have to be made and kept perfect, as against twelve times that number for a similar quantity of chemicals with smaller retorts. All the joints are placed so as to be accessible and readily examined, and the quantity of piping used reduced to the greatest possible extent, to ensure a rich product.

Each set of pumps (and which may be worked alone or in unison with the other) consists of a series of three cylinders, placed vertically side by side and having two feet stroke; the exterior ones form the pumps for delivering the air under pressure to the retorts and the central cylinder in each case acts as the vacuum pump. The air is drawn by the pumps through a vessel containing lime, as while moisture has no deleterious effect on the chemicals it is found desirable to extract any acids there may be in the atmosphere before allowing the air to pass through the retorts. As, however, the carbonic acid in the atmosphere amounts only to about one part in ten thousand, half a ton of lime, either in the hydrate or as quick lime, will do duty for an indefinitely long period.

The pumps then deliver the air, which in consequence of the compression it has received has had its temperature considerably augmented, into the first of the five retorts, passing on its way, however, after leaving the pumps, through a vessel containing caustic soda in lumps, which purifies it from any oily matter with which it may have got contaminated in its passage through the pumps. This first retort to which it passes, as before mentioned, contains no chemicals, and simply does duty as a superheater, enabling the oxygen to be produced with a much lower furnace temperature, and, therefore, more economically than if it were absent. The remaining four retorts are arranged in a series of two pairs, and so connected that while one pair is absorbing oxygen from air under pressure, the other pair is evolving oxygen due to the operation of the vacuum cylinders. There is, therefore, practically a continuous and not merely an intermittent flow of the gas. Air under pressure is constantly being delivered to the superheater, and is directed by a valve into one pair of the retorts for about two minutes, the other two during this period giving off their oxygen; at the end of this time the air is automatically directed to the other pair of retorts, and those just relieved from pressure, at the same time become connected with the vacuum cylinders and so on as long as desired. The pressure at which the air shall pass through the retorts is regulated by two small valves operated by springs, which open and allow the nitrogen to escape into the atmosphere at any predetermined pressure. From 5 to 10 lb. per square inch is found in practice to give good results.

In order to test the strength of cast-iron vessels under pressure when at a red heat, and so guide us in allowing a good margin of safety, an experiment was made with a specially constructed cast-iron pipe. This was brought to a red heat, and an attempt made to burst it (the experimenters taking up their positions for observation at a safe distance). A gradually accumulating pressure up to 450 lb. per square inch was reached (being as high as the

particular gauge used would register), but the tube, which was only half an inch thick, did not burst or give way in the least. The safety of well-constructed cast-iron retorts is therefore placed beyond doubt. When drawing off the oxygen, all that is evolved passes through an apparatus known as a separator, which allows it and the nitrogen to escape into the atmosphere until a vacuum of about 25 inches is indicated, when the gas is turned automatically into the holder. Owing to having only very recently had the plant in working order, we are not just at present able to state in exact figures its capabilities.

At present, experience, however, justifies the following brief particulars, which, nevertheless, must be taken as only representing half the producing power of the whole, as two out of the four retorts charged with chemicals have exhibited defects, which has rendered it necessary to throw them out of work for a time.

The two retorts now working yield a quantity of oxygen, with only one set of pumps in operation, amounting to 7,500 ft. per twenty-four hours, and when the double set of pumps are in operation, the production is 15,000 ft. per diem.

The expenses of the plant, including depreciation, may be set down at £1 per day. Assuming the price of coke on the premises to be 7s. 6d. per ton, one labouring man is capable of taking entire charge, the only work needed being attention to the fires, and oiling of machinery, all else being automatic.

Although allowing considerable margin for exigencies, the expenses per 1,000 ft. may be safely set down at from 1s. to 1s. 6d. in the holder for gas in a high state of purity. In commercial processes where so great a degree of purity is not essential, the cost would be very materially reduced, and for many purposes the cost of erection of a plant would very soon be covered by the additional advantage gained by the use of oxygen over air. The size of plant to a certain extent governs the cost of the oxygen produced, the larger plants producing it the most economically, the cost also varying somewhat according to the prices of fuel and labour respectively in the localities under consideration.

## Extemporised Hand-Cameras.\*

BY THE REV. W. MILES BARNES.

I MAY as well say at the outset that the object of this paper is to show that a hand-camera specially made for the purpose is not a *sine qua non* for the production of the best instantaneous work; but that results equal to the best that can be done with cameras specially constructed for taking snap shots with fast lenses and extra rapid shutters can be obtained with a cheap, if suitable, camera of the ordinary type held in the hand, and that all the speed required under ordinary circumstances can be obtained with ordinary lenses and ordinary plates, if a suitable developer be used. Of course, a magazine, with which most specially-constructed hand-cameras are supplied, has some advantages over slides; the magazine charged is generally lighter than slides containing the same number of plates; but with this advantage are disadvantages which far outweigh it. The perfect magazine has yet to be devised which shall be always ready, always reliable, and certain to present the plates contained in it in succession without chance of failure, and so that all shall be in precisely the same position with regard to the lens—not the sixteenth of an inch nearer or farther from it. Most magazines have the disadvantage also that one plate at least is always exposed within the camera, and there are few cameras and shutters so perfect that no trace of light will filter in through the course of the day's work.

Weight is certainly a disadvantage when working with slides; but if you are working a quarter or 5 by 4 camera, the difference in weight (especially if the kit is carried in a knapsack) between six light double slides and a magazine carrying a dozen plates is inappreciable, and a quarter-plate or a 5 by 4 camera is quite large enough for general use, for with the aid of a fixed-focus enlarging camera the small plates can be made to give a good 12 by 10 print, whilst for lantern-slide work the negative can be printed from direct, and unless landscape photography

\* A communication to the Dorset Amateur Photographic Association.



is done in a very indiscriminate manner, twelve plates which the six slides will contain will be found sufficient for an ordinary day's work. It is only occasionally when travelling, and when mementoes are required of places visited without regard to the picturesqueness and composition of the picture, that twelve plates may be found insufficient. Under such circumstances a roll-holder can be used. The roll-holder is a valuable addition to the kit, especially on mountain excursions, and, indeed, wherever suitable conveniences for changing slides cannot be found, and its lightness is an undeniable advantage.

Any ordinary camera will do for instantaneous work if only it is rigid, and will allow of its front or back being racked or shifted out or in, so that the focus may be readily adapted for near and distant objects. The retail price of the camera I hold in my hands is about 14s. It has not a rack. The front slides on brass strips to which it can be clamped at any point by means of the side screws; the other camera can be racked out and in, in the usual way. At the sides you will observe are marks with figures 8, 16, and distance. By racking the camera to those marks I know I have the right focus, without the use of the ground-glass for objects at these distances and for general landscape work. On the top is a brass slot, into which slides this view-finder, which is, you will observe, of the camera form, but with the ground-glass on the top. Upon the lens is a shutter with pneumatic release. On a suitable subject presenting itself, I rack the camera in or out according to the distance, draw the slide, hold the camera to my chest, observe on the ground-glass of the view-finder when the object is in the right position, press the pneumatic ball, and the work is done. I will show some slides made from negatives produced by Shew's "Eclipse" camera, which is an admirable instrument, and others produced in the way I describe with the camera before you, and you will not find it possible to select the work done in the ordinary camera. If economy is an object, uncorrected lenses can be used; but in that case the focus must be carefully calculated beforehand, and the camera as carefully marked for the several distances.

The form of shutter to be used on the camera is a matter for consideration; there are shutters now in the market which can be set at speeds varying from a rate with which it is impossible to produce a satisfactory picture with the fastest of plates up to time exposures. For very special purposes a shutter working at a high speed may be necessary; but for ordinary instantaneous field-work one speed is sufficient. The shutter of Shew's Eclipse hand-camera, which works between the lenses, had but one speed, though the time of the exposure may be regulated by rotating diaphragms, and, as I shall show later, by the method of development.

You will observe amongst the lantern slides beats under full sail, steam vessels under steam, moving men, horses, cows, artillerymen working guns, all sharply defined, though all were taken by means of shutters which had one speed only.

As to the kind of shutter advisable, the drop-shutter, though admirable in its way, is not suitable for the purpose, as it rises in front of the camera finder, and on account of its size it so readily catches the wind, which affects its speed; moreover, the drop-shutter must be kept upright, which is not always possible with every subject, it will not work in any position. There are so many good shutters in the market that it is not advisable, without first testing them one against another, to pronounce in favour of any one of them.

Any good plate can be used if it is not too slow. Most of these negatives were taken on Ilford ordinary and Mawson's plates. On one occasion, wishing to compare pyro and hydroquinone development, I developed plates exposed for the same time at a set distance from an oil-lamp—one with pyro, the other with Thomas's original hydroquinone. The pyro plate seemed greatly under-exposed; the other was about right. In making further experiments, I found that, for development with pyro, the plate required nearly three times the exposure necessary for hydroquinone. Here, then, we have a better method for regulating exposures than by the use of excessively fast (which are often excessively thin) plates, or by the use of shutters worked at very high speeds. When light is poor, use hydroquinone; when fast, pyro, or hydroquinone with the lens stopped down. It is possible also to develop the high lights of a picture with pyro and finish with hydroquinone, so that by varying the method of development considerable latitude can be given in making exposures.

## An Introduction to Silver Printing.\*

BY D. E. GODDARD.

THE first process to which we must direct your attention is on what is called albumenised and matt-surface paper. Anyone who has time and suitable appliances can with care prepare his own paper if he wishes to do so. Home-made sensitive paper is capable of splendid results, and a wide field is opened to the student to vary his paper to special requirements, using rough, medium, or smooth drawing paper, as his subjects may require.

Formule for salting and sensitising will be found in any good manual. Few of those commencing the study of what has been called our art-science are in a position to sacrifice the time and incur the risk of failure before the mysteries of exposure and development have been mastered. Then, again, the keeping properties of home-sensitised paper are not equal to the keeping properties of the best paper in the market. We therefore advise the student to procure the best brand of paper he can get and stick to it. It will be found that getting, say, a quire at a time, unless the consumption be rapid, will not be economical, as even the very best paper does not improve by keeping. A convenient way of keeping the stock fresh is to buy a quire, and draw the sheets as required from the retailer.

The design of this paper is to trace the manipulation necessary for silver printing, and to give a few hints which may help the student to success with the least expenditure of time, money, and, perhaps, temper. We shall bring before you sundry processes, so far as our own experience has enabled us to work them, taking nothing on hearsay (unless specially noticed), and bringing every statement to the test of actual studio work.

We will suppose that a camera has been bought, and that after a few—or, perhaps, not a few—failures, a negative has been produced which has fewer faults than any of its predecessors. The student wants to see a print, or, as the first print is called, a proof. The first piece of studio furniture now required will be a printing frame. This need not cost much. The common teak frames at 6d. or 1s. will last a long time. It is wise, however, to see that the back fits evenly into the rebate; should it not do so there will be a risk of breaking the negative.

We prefer cutting up our paper, but it is often convenient to buy it cut up into the sizes wanted. It will also be found well to keep it, either in rolled sheets or cut up, in light-tight cases of tin; old biscuit tins, blackened with Berlin black thinned with turpentine, answer admirably, especially if a perforated box containing calcium-chloride be enclosed. For convenience it will be found advisable to stencil with white paint, or write with white ink the contents of the box on the blackened surface.

Our negative is taken from its paper envelope, a broad camel's hair brush passed over the film, and placed film upwards in the printing-frame. The same brush is passed over the albumenised or shining surface of the paper, which is then carefully laid on the negative, the sensitised surface next to the film. We always place on the back of the paper several pads of thick brown paper cut to the size of the plate and perfectly smooth and dry. Tailors' patterns make even better pads. The object is to insure the paper being absolutely flat on the surface of the negative. The back of the frame is then secured. The question now arises, how shall this be printed—in what light? direct sunlight or diffused? This must depend on the condition of the negative, also the amount of light available. We will suppose we are printing from a good ferrous oxalate, quinol, or pyro negative, on a fine day in June, July, or August. We should not dream of placing the negative in anything but diffused light, a north aspect if possible. Should we, however, be printing from a dense, over-developed, or a stained negative, we might find that the printing process in a light of this kind would be very slow. We should, therefore, print in direct sunlight.

It may be that the negative from which we want to print is thin, or weak, although abounding in detail, and that even in diffused light the printing will be very rapid, in fact too rapid; in this case we must slow the printing. There are several ways of doing this: (1) By placing a piece of ground-glass over the negative in the frame, or over it on the frame; (2) by stretching white tissue paper, one, two, or three layers, over, or partly over, the frame, taking care, if it is a case of partial masking, that the paper is torn, not cut, otherwise the cut edge will give a line in the print. Should the negative be so

\* Read before the Croydon Camera Club.



weak as to be almost unprintable by ordinary means (hand camera work, lacking judgment, for instance), a print may often be obtained by masking the negative with pale yellow, or various tints of red or green tissue-paper, or by using a sheet of green instead of ground-glass. There are many other dodges for improving defective negatives; but not having tried them we cannot speak from experience as to their value.

Some months since the question of printing under green glass was much discussed in the various journals. We found that very fine tones were produced, especially with Aristotype paper, which when squeezed down on ferrotype or ground-glass gave very fine effects, the latter resembling platinotype. We consider the means thus supplied for obtaining prints from weak thin negatives, otherwise unprintable, are alone sufficiently valuable to give green glass a special box on our shelves. Our first negative, the good, quick printing one, will have to be carefully watched. In examining how far the printing has gone, we take the frame into subdued light and open half the back, being very careful that only one spring is moved at a time, otherwise there will be a great risk of shifting the print, which would result in double printing. We must not stop the printing when we have obtained the depth of tone we require, but continue until it is deeper—sometimes much deeper than we want, as in subsequent fixing operations much of that depth of tone will be lost. As a general rule we print till the high lights are “blushed,” care being taken not to block out details in the shadows or darker portions of our picture.

We must now consider another variety of paper, that having a matt surface. There is often a difficulty in determining the sensitised side of the sheet; many a print have we spoiled in consequence. There are several methods by which the correct surface can be ascertained. Generally that surface shows a tendency, common to all sensitised paper, to curl inwards. Examination with a hand magnifier will show that the grain of the paper is larger on the wrong side, and finer on that sensitised. This difference of grain can also be detected by the tips of the fingers, but sometimes we have known this test to fail.

It is well to bear in mind that with matt-surface paper printing must be carried very much further than with albumenised paper. For this reason, it is more porous, and is acted on to a greater extent by the fixing solution of hyposulphite of soda. The print must, when it comes from the frame, have the appearance of having been tremendously over-printed. Only experiment with a given brand will give requisite experience. Each brand of paper will probably require special treatment, therefore it is advisable with both classes of paper, albumenised and matt, to select the very best brand of each obtainable, and stick to the one selected. If the print is not sufficiently printed, the result will be a weak, washed-out, sickly print.

We must now turn our attention to a paper producing the finest results possible in silver printing, viz., Aristotype.

Until very recently we were dependent on Obernetter and Liesegang, of Dusseldorf, for the only papers of this description. Fallowfield has placed on the market a truly fine paper, giving very good results. The Blackfriars Road Company has also introduced Celerotype. The Ilford works have just issued a remarkable paper of this class at the price less than that of the best albumenised. Whether Celerotype and the Ilford will keep well is a question to be proved. Certainly Fallowfield's and the Ilford produce admirable results, and are both dangerous competitors to the foreign manufacturer. Although we think that Germany at present carries off the palm, we may venture to hope that at no distant date the notice “made in Germany” will cease to be a guarantee of excellence, and that English enterprise will lead, instead of follow, in this, as in other departments of science and manufacture.

Printing on Aristotype paper is attended with no more difficulty than printing on ordinary albumenised. Its detail-giving properties are marvellous; the best results possible, under certain circumstances, can be obtained from very inferior negatives, which would be utterly useless if printed on any other paper. We shall presently describe a process by which a glaze equal to that produced by a burnisher, or a matt effect—coming very close on platinotype—can be produced at pleasure.

All prints, when removed from the printing-frames, should be kept in light-tight boxes, adopting the same precautions as for storing paper. The best result is obtained by toning the print the same day; it is not advisable to postpone that process for

more than seven days, although we have kept prints for two or three months, and then toned, but the results were not so satisfactory and the time taken in the bath was much longer.

Before proceeding to the next process—toning—we will notice a purely mechanical operation, viz., trimming the prints. We strongly recommend that this be done before toning, for two reasons: (1) It economises the gold; (2) the prints can be mounted straight from the drying book. There are many fancy trimming tools in the market; we have tried many, but after some years' experience, we have met with none equal to a shoemaker's knife. There are various patterns, some long and tapering, some broad, with a long blade, others with a broad, short blade of about three or four inches. We refer the broad, short blade, because from having no spring in it a much firmer cut can be made. We always use this knife for cutting up paper as well as for trimming. A very convenient cutting bed can be made of a piece of plate-glass, or a sheet of zinc one-eighth of an inch thick, or a thin sheet of zinc screwed on a perfectly level drawing board. The knife when blunted only requires a few passes on a scythe stone and then stropping on smooth wood.

Permit us to observe that trimming prints does not mean merely taking off the marks round the picture produced by the flange of the printing frame. It means so trimming the prints as to show the studies off to the best advantage, by modifying and correcting any errors of composition that detract from their pictorial effect.

(To be continued.)

## Calculation of Exposures.

BY ALFRED WATKINS.

PROBABLY the majority of experienced photographers, if asked their opinion of either of the several “aids to exposure” now before the public, will reply that they cannot possibly take the place of experience, and that the experience which leads to the correct estimation of exposure cannot be communicated from one person to another.

Now, experience is simply knowledge derived from a record (mental or otherwise) of observed facts, and the reason why a photographer is unable to communicate his experience to others is that his observation of the facts is vague and unsystematic, and that he is practically without a language to record and communicate these facts.

The object of an exposure instrument or system is therefore to provide this language, and to be efficient it should provide means for the accurate observation and record of the factors which affect an exposure, and, secondly, it must provide simple means for calculating the exposure from these observed facts.

These factors have no more connection with each other (as will presently be seen) than have the colour, age, swiftness, pedigree, and soundness of a racehorse; and the amateur photographer who wants an instrument to indicate exposure by one simple observation makes just as reasonable a request as if he were to ask for an observing instrument which, if directed towards a racehorse, would indicate its market value. Again, it must be clearly understood that an exposure instrument has to deal with one branch only of the wide art-science. It can be nothing more than a tool for a photographer to use, and in no way deals with the artistic selection, composition, and lighting of the subject; nor can it insure against blunders in unsuitable or incorrect development.

I can best lead up to the essentials of a useful exposure instrument by dealing with the different exposure influences separately; they are:—Plate, diaphragm, light, subject, and distance.

(1) The sensitiveness (as proved by photographing coloured objects) of the plate used. A standard scale of sensitiveness is still sadly wanted; it is a most difficult problem, and is certainly not solved by accurately measuring the sensitiveness of the plate to white light, as in Messrs. Hurter and Driffield's system, however great an advance that may be on previous methods. With my instrument I indicate in the instructions the sensitiveness of samples of most commercial plates as tested by me in the camera. My unit of sensitiveness (P1) is a plate which with one second's exposure in best June sunlight, with  $f/8$ , on an object of average colour, gives a properly exposed negative with normal development.

(2) The size of the diaphragm used in the lens. There is no need to dwell upon this factor, as it is a purely mechanical one, and is fully treated in the text-books. It is necessary for cal-



ulation of exposures that all diaphragms be marked with their relation to the focus of the lens.

(3) The actinic power and volume of light falling upon the worst-lighted part of the subject in which detail is required. This influence is the most important of all, and the one over which most blunders have been made by inventors of exposure instruments.

The old method is to estimate the value of the light by "experience," or (as the photographer fondly imagined) by judging the appearance of the image on the focussing screen. Now, the human eye is quite incapable of estimating the actinic value of light, and when an experienced photographer thinks he is estimating the photographic value of the light by its visual appearance, he is unconsciously comparing all the attendant circumstances of time of day and year, and state of atmosphere, with some previous practical trial; he will probably get correct results, but it is on account of his mental record of previous trials. The exposure tables attempt to value the light by taking advantage of the following fact: that granted a perfectly clear sky, the chemical effect of the sun is always the same at a certain altitude, and that an observation of the time of day, and day of the month determines this altitude. This being taken as a basis, the atmospheric conditions have to be judged by the user's eye, from "very bright" to "very dull," covering a range in exposure of one to four, or one to five. This method has proved of considerable value as a rough guide to those who have no previous experience to help them, but as an exact method of calculating exposures it has grave disadvantages, and is extremely limited in its application, as I shall try to point out.

In the first place, it is most difficult for even an experienced man to correctly estimate the variation due to atmospheric conditions. The light reflected from the sky is, in four cases out of five, really that which determines the exposure (as the shadows, and not merely the sunlit parts have to be exposed for). This sky light may be actually greater when the whole sky is obscured with clouds than when on the previous day at the same hour the sun was shining brightly. The transparency and reflecting power of the clouds are therefore most important factors, as a man who uses a chemical actinometer soon finds out.

In the second place the exposure table system leaves entirely to individual estimation the most important question of how large an area of sky actually illuminates that part of the subject which has to be considered the keynote of the exposure.

Let me give some instances. It is a brilliant spring day, and at the spot where I am writing the actinometer takes 130 sec. for the sensitive paper to darken to a certain intensity; two yards nearer the window it only takes 60 sec. I step out into the porch, the light is 30; I test the sky light out in the open (shading the sun's rays) and it is 12; against the north side of the house, which is illuminated by a smaller area of sky, the light is 22; while the direct sun's rays do the same chemical work in  $3\frac{1}{2}$  sec. All these tests are made within ten minutes, and I know by practical trials with this particular actinometer, that if the same subject (say, a human figure) is placed in the different positions I have intimated, the proper exposure would be in proportion to the actinometer observations I denote. Three days ago I was testing a batch of plates, the sky was completely overclouded, and no sun shining, and its visual appearance was decidedly "very dull." To my surprise, its actinic value was 10, greater than it is to-day, or on several other days when the sun was shining brightly. I should not mention this last, only that it happened to be verified by three other photographers (users of my instrument), who, meeting at a local dealer's about the same hour of the day in question, remarked upon the badness of the light, one guessing it would be about 30, another had an idea that it was not so bad as it appeared to be, and on testing it found it to be 10; half an hour later, when the clouds became denser, the same observer found the light in the same place to be 20.

I give these instances to illustrate the difficulty of estimating the light by visual means, even if a correct table of the average light at certain hours of the day and month is taken as a basis.

The plan which I have adopted is to test the actual chemical intensity of the light which falls upon that part of the subject which has to be exposed for (the shadow part usually), and to make this test by means of a bromide of silver actinometer, as first suggested by Capt. Abney. This allows the worker to leave out of question all those complicated factors which, as I have already pointed out, influence the light intensity to so great a degree. It requires a certain amount of training in a new

method, and, to some very colour-sensitive people, appreciation of the fact that the light action on the sensitive paper is not to be judged by colour, but by intensity or darkness of the deposit; but the results fully justify the method. It has been objected that the visible darkening of a bromide paper is not bound to have a constant ratio to the invisible action of the light on a bromide film. I grant this, but I have found it perfectly practicable to produce, by experimenting with different formulae, a paper which has a constant ratio to the sensitiveness of an average commercial plate. Even giving a variation of 25 per cent. for errors of observation, etc., in the use of an actinometer, the results are more reliable than the exposure table method.

I have repeatedly exposed one plate on an outdoor subject, and another on an interior (the exposure estimated by the actinometer being from 100 to 700 times that of the outdoor one), and developed the two plates together in one dish at the same time, with satisfactory results. The exposure table system is very little help in such a case; all the indication Wornald gives for interior work is "twenty-five times as much (or more)," and the Actinograph "about 300 times."

It might be asked, what is there to insure the paper darkening to its painted tint in a standard light, and is it not liable to deterioration? In the first place every batch of paper made has the proper tint adjusted to it by exposing to a standard light; and a precaution has recently been taken to obviate the latter difficulty, it being sealed up in a metal capsule with calcic chloride, and therefore secure from any change until opened for use.

(5) The colour, or photographic value of the subject. As in my system I make an actual test of the light value, I am able to consider the subject as a separate value; for instance, a dark oak carving would have the same subject value in bright sunshine as it would in a dark interior.

Although the subject value depends upon the capacity of the subject for reflecting actinic light, it is a gross error to suppose that it is in proportion to such reflecting power. I once tested the actinic reflecting capacity of a dark, closely-cropped yew tree hedge, and of a white linen sheet; it was 1 to 26. I then took a series of negatives of the two subjects, developing all together in the same dish; the difference between the proper exposures for the two was 1 to 6. Any instrument which is based upon an observation of the amount of actinic light reflected from the subject is on a thoroughly unsound principle.

The subject value varies on my scale from 35 for white subjects to 200 for very actinic ones; the average subject value is 100, and in practical work this is what is used in four cases out of five.

Mist in the air, so often spoken of as "distance," acts as an addition to the reflecting power of the subject, and a smaller subject value is therefore required.

(5) Distance of subject from lens. Here again errors have crept in. There is a general idea, perhaps taken from a table of distances published by Mr. Howard Farmer, that distance decreases exposure. Now, in a perfectly clear atmosphere, all objects which can be approximately in focus at the same time, say from 20 ft. up to 5 miles, require the same exposure, only that in our climate the mist or haze does decrease the proper exposure for distant objects. On a clear day the landscape may fade into sky at ten miles distance; on a very foggy day it may fade into sky at ten yards distance; so it will be seen that no rule as to mist can be formulated. The experiment by which I proved that distance by itself does not affect an exposure, was as follows:—I hung a series of sacks, all alike, on a fence, the camera being five yards from the nearest, and 100 yards from the most distant. After exposure and development (the day being fairly clear) the opacity for each sack in the negative was identical.

I do not mean to infer that the table referred to above does not state in a rough approximate way some information useful to beginners, because when the nearest shadow is 20 ft. distant it is of sufficient importance to make it necessary to render full detail in it, and therefore the shadow light would be the basis of exposure; when the nearest shadow is 100 ft. distant, it may be too insignificant to consider, and the full sunlight might be taken as the basis of exposure.

Distance considerably affects the exposure when very near objects are photographed, as in copying and (to a much greater degree) in enlarging. When the subject is twenty-four times the focus of the lens, distant from the lens, this increase is only 1-10th, but it rapidly becomes more important as the subject is brought nearer, and the camera racked out. When copying equal size the exposure is increased four times.



## Exhibitions.

### BIRMINGHAM PHOTOGRAPHIC SOCIETY.

THE Annual Exhibition of the Society was held on April 5th, 6th, and 7th, and more than fulfilled the anticipations of the Committee, both as regards the number of exhibits and the financial success of the undertaking. Some 430 pictures were entered for the thirty-one classes, the variety of which offered every facility for intending exhibitors; to these competition pictures were added several by Mr. J. B. Stone, the President, and Mr. E. C. Middleton, etc. The judges were Messrs. Geo. Bankart, J. Carpenter, C. W. Hastings, T. C. Hepworth, R. Keene, the Rev. F. Lambert, Paul Lange, H. P. Robinson, F. Sutcliffe, and B. Wyles. The following are the awards:—

- CLASS 1. Instantaneous.—Medal, G. Wilkes; hon. mention, W. J. Harrison.
2. Landscape.—Not awarded.
3. Landscape.—Medal, J. W. Moore; hon. mention, A. R. Longmore, H. Southall.
4. Transparencies.—Medal, S. G. Mason; hon. mention, C. F. Jarvis, A. R. Longmore, Wm. Rooke, W. J. Harrison.
5. Enlargements.—Medal, H. Southall.
6. Portraiture (single).—Medal, W. Wallis; hon. mention, G. Wilkes.
7. Portraiture (two or more).—Not awarded.
8. Lantern Slides (landscapes).—Not awarded.
9. Lantern Slides.—Not awarded.
10. Interior.—Medal, A. J. Leeson.
11. Genre.—Medal, A. J. Leeson; hon. mention, A. J. Reilly.
12. Hand-Camera.—Medal, G. Wilkes.
13. Architecture (exterior).—Medal, W. Rooke; hon. mention, J. W. Moore.
14. Seascapes.—Medal, not awarded; hon. mention, W. Wallis.
15. Animals.—Not awarded.
16. Flowers.—Medal, T. J. Davies; hon. mention, W. J. Harrison.
17. Six Photographs (quarter-plate).—Medal, T. J. Davies.
18. Six Photographs (Warwickshire).—Medal, E. H. Jaques; hon. mention, W. J. Harrison.
19. Three Warwickshire Churches.—Medal, E. H. Jaques; hon. mention, W. J. Harrison.
20. Three Warwickshire Buildings.—Medal, W. J. Harrison.
21. Three Warwickshire Peasantry.—No entry.
22. Three Warwickshire Doorways.—Medal, E. H. Jaques.
- 23, 24, and 25. Six Photographs for Survey.—Not awarded.
26. Three Birmingham Pictures.—Medal, W. S. Horton.
27. Six Birmingham Buildings.—No entry.
28. Clouds.—Medal, Geo. Wilkes.
29. Photographs (general).—Medal, J. P. Heaton; hon. mention, Wm. Rooke.
30. Combination Printing.—Medal, A. J. Leeson.
31. Three Prints for Members who have never taken a Prize.—Medal, E. Winn; hon. mention, W. J. Hands, F. S. Goode, G. Wilkes, W. S. Horton, G. A. Thomason, W. F. Ewing, B. Godfrey, J. Rushton, J. H. B. Manley, R. T. Deakin.

Among the most striking pictures was one entered in Class 6 (single portraits), entitled "Simple Beauty and Rustic Health," by H. G. Leeson, the medal being withheld from the competitor on the ground that it was a genre picture, and therefore wrongly classed.

Each evening a lantern show was given by Mr. Jaques, Chairman of the Committee, and each evening the room was packed. The Committee therefore had the satisfaction of knowing that the exhibition was well appreciated by the public, and it is suggested that it would be well in future to hold it open during four instead of three days.

On the Saturday following the exhibition the members of the Society dined together at the Colonnade Hotel, the President, Mr. J. B. Stone, J.P., taking the chair. The National Challenge Cup, won by the society on the only two occasions (1890 and 1891) when it has been offered for competition, was significantly used as loving cup with all due formality, each drinker being duly "guarded from treachery" by the previous drinker. Mr. Middleton and Mr. Jaques gave a demonstration of legerdemain, and the very high-class tricks shown were specially well executed. Mr. Stone very heartily congratulated the members on the position the society had won for itself, and mentioned the compliment which the society had just paid to it in the selection of Mr. Middleton as examiner in photography to the City and Guilds Institute, in the place of Captain Abney, F.R.S. The officers of the society were duly thanked

for their services, and a warm tribute was paid Mr. Mousley for his energy and tact in directing, as secretary, the affairs and interests of the society, and also to Mr. Harrison as Vice-President, and Mr. Jaques for the leading part they had taken with Mr. Longmore, etc., in the work of the Exhibition.

In proposing "Success to the Birmingham Photographic Society," the President ardently maintained that photographers did not appreciate the full significance and beauty of their art-science, and spoke enthusiastically of the position the Warwickshire Survey would occupy in the future history of Warwickshire and of photography, and claimed for it the lasting gratitude of posterity. Some 1,200 prints have been sent to the Curator of the Survey, Mr. Simkins, and these will shortly be exhibited under the auspices of the Birmingham Municipal authorities in their Art Gallery.

Mr. Pickard, in speaking of the Survey, indicated the very valuable work which had been done for it by Miss Stone, and it has been arranged that the original members be taken in a group and a print be included in the Survey series.

### THE SELBY CAMERA CLUB'S EXHIBITION.

THE first public exhibition of this club was held on the 21st ult. in the Public Rooms, Selby, which for the occasion had been transformed into an art gallery. On entering the room the studies in architecture at once attracted attention both as to their number and as to the excellence of the work. Mrs. E. Swain and Mr. J. C. Thompson were the prize-winners in this class. There were not so many landscapes, but those exhibited were of a creditable character. Mr. J. C. Thompson took first honours. The pictures of Mr. W. Rawling, who is quite a veteran amongst local amateurs, were also much admired. The water-colour portraits, etc., were exhibited in an adjoining part of the room. Messrs. Rawling, Cheesman, Green, W. Thompson, Blackburn, Allison, and Mr. and Mrs. E. Swain were the principal exhibitors in these classes. In the class for miscellaneous studies some fine work was exhibited. The first went to Mr. J. C. Thompson for four excellent studies of statuary. Mr. W. N. Cheesman was awarded the second prize for some beautiful photo-micrographs. The third was awarded to Mr. Thompson. There was a large number of non-competitive works exhibited by the members of the club, amongst which were some good examples of photography. For the professional work exhibited, the club is indebted to some of the leading firms of the kingdom. Messrs. Marion and Co. had sent a couple of fine silver prints and an excellent pair of photographs on opals. Messrs. Fry exhibited specimens of work upon their rough bromide paper, but the palm in this class was undoubtedly carried off by the Eastman Company with two large and beautiful pictures executed by enlargement on their permanent bromide paper. Amongst the apparatus contributed were cameras, transparencies, etc., by Messrs. Marion and Co., and other apparatus by Messrs. Reynolds and Branson (Leeds), Mr. Cooper (Selby), and Messrs. Beck and Co. There were two stands containing a number of lantern slides, which were much admired. The successful competitors in this class were Messrs. Rawling, Cheesman, and W. Thompson. Messrs. Warburton and Denison, of the Leeds Photographic Society, were the judges. The exhibition was opened by Mr. Wm. Monkhouse, of York, in the presence of a large gathering. During the evening demonstrations were given by Mr. J. C. Thompson in portraiture with the flash lamp. Mr. Rawling displayed his ability in the bromide printing; whilst Mr. Cheesman gave a demonstration of photo-micrography and lantern-slide work. Probably the most attractive part of the entertainment was the lantern-slide exhibition, over 200 slides by the best English and American workers being passed through the lantern. A set of prize slides and the American slides were much admired; whilst the more modest works of the Selby Club excited a good deal of attention. During the evening a capital programme of music was performed by the Selby Abbey Church Orchestral Society, under Mr. F. W. Sykes, F.C.O.

### ULSTER AMATEUR PHOTOGRAPHIC SOCIETY.

The fifth exhibition of the above Society was held in Belfast, from 26th to 29th ult. It was open only to members of the Society and to members of the Belfast Y.M.C.A. Camera Club. About eighty frames were sent in. There were three sections, in each of which several medals were placed at the disposal of the judges:—Section 1, art, two silver and five bronze medals; section 2, lantern slides, one silver and two bronze medals; section 3, educational (including scientific, architectural, archaeological, etc., pictures), one silver and one bronze medal.

The awards were as follows:—Section 1, silver medals, W. J. D. Walker, Jas. A. Pollock; bronze, T. F. Bell, S. B. Coates, M.D., T. B. Scott, Cecil Shaw, M.D., W. J. D. Walker; Section 2, silver, T. F. Bell; bronze, Wm. Swanson, F.G.S., T. B. Scott; Section 3, silver withheld; bronze, Jas. Leslie. A special prize for the best album of prints was awarded to Mr. W. J. D. Walker.



## Societies' Meetings.

**Aberdeen.**—The monthly meeting was held on 26th ult. Mr. W. Todd Moffatt, the President, in the chair. Mr. Main, one of the members of committee, read a paper on "Lenses," in which, in very clear terms, he explained the purpose served by the lens in photography, and the functions of the different classes of lens, as to whose use he gave many useful hints. A large number of new members were admitted, foremost among these being Professor Findlay and Mr. Barnett. It was decided that the next meeting of the Society should be held in the new rooms leased in Union Street—the formal ceremony of opening to be presided over by Dr. MacKenzie Davidson, the Hon. President of the society. Various proposals were under consideration with regard to the spring holiday, and it was ultimately agreed that the society should have an excursion to Edzell, in the vicinity of which there is some splendid scenery. The hope was expressed that as this was the first of the society's summer excursions there would be a large attendance of members. The party will go by train to Laurencekirk, and then drive to Fettercairn and Edzell.

**Coventry and Midland.**—On the 27th ult. another pleasant lantern exhibition was arranged for members and friends in the Society's room at the Technical Institute. Mr. Councillor Andrews presided. The lecture was entitled "The Yosemite Valley," and, together with no less than seventy-seven slides, illustrating the principal objects of interest, were sent over to this country by the California Camera Club, U.S.A. The slides are being distributed among the photographic societies of this country through the medium of the Liverpool Amateur Photographic Association. The Yosemite Valley is situated in one of the Western States of America, and for natural picturesque scenery is one of the most charming places in the world. The slides, all of which were remarkably good, were shown by means of limelight, Messrs. T. W. Owen and L. J. Orton manipulating the lantern, whilst the connective readings were very ably given by the Rev. H. Stanley Mercer, Baginton.

**Croydon (Camera Club).**—Ordinary meeting, 25th ult. The President drew the members' attention to the great value of the means described by Mr. J. E. Hodges in the current number of the *Photographic Quarterly*, of improving certain classes of negatives by treating them successfully with uranium, ammonia, and mercury, and showed process prints in illustration of his remarks, which evoked much interest. Mr. G. R. White gave a clear and masterly exposition of the construction and uses of the various parts of the optical lantern, which being more practical than verbose was both welcome and serviceable to those who were present. A number of slides were shown; noteworthy were those of Mr. A. E. Isaac, taken in and about Belgium. The next evening meeting will be held on Monday, 9th May, when Mr. E. J. Wall will lecture on "Development." The first Club excursion of the season was held on the 30th ult., when a party of fifteen, in charge of Mr. H. Maurice Page, visited Oxted. A thoroughly enjoyable afternoon was spent, which, in other words, means that a large number of plates were exposed; and yet many returned home regretting that several subjects had to be left over for some other day. The next ramble will be conducted by the President.

**East London.**—Ordinary meeting 26th ult., Mr. C. Tylee, Vice-President, in the chair. Twelve months having elapsed since the formation of the Society, the Hon. Secretary, Mr. M. A. Wilkinson, gave the full history of events during that time, and presented the statement of the financial position of the Society. The total income was £20 18s. 4d., and the expenditure for the year amounted to £17 13s. 6d., leaving a balance of £3 4s 10d. to be carried forward to next year's account. The number of financial members is thirty-seven. Several members have been elected to commence the new year. With regard to the individual work of members, considerable progress has been made. The Secretary then informed the members that the Eastman Photographic Company had kindly sent some bromide enlargements and contact prints, and that he had also received a set of competition prints from the AMATEUR PHOTOGRAPHER, which were then placed before them. The prints and enlargements from the Eastman Company were greatly admired, and the competition prints freely commented upon. One hour previous to meeting was devoted to lantern slide making by Mr. G. S. Pasco, A.P.S.

**Fairfield (Liverpool).**—The first excursion of this society took place on 30th ult. The places chosen were Rossett and Gresford. The leader was the President, Mr. J. L. Mackrell. A most enjoyable day was spent in perfect weather. About twenty attended, and 168 pictures were taken. It is intended to hold a sweepstakes competition for three prizes for the best pictures taken during the day. The whole outing was a great success, and the club is greatly indebted to the President for his trouble.

**Gloucestershire.**—The annual meeting of the above society was

held on the 25th ult., when the following were elected officers for the year:—President, Rev. Mowbray Trotter; Vice-President, Mr. F. H. Burr; Hon. Treasurer, Dr. Hodges; Committee, Messrs. W. C. Beetham, H. S. Crump, W. J. Jenkins, A. H. Pitcher, T. G. Smith; Hon. Secretary, Mr. W. Walwin. The Secretary's report showed the society to be in a satisfactory condition financially and otherwise, and with a series of outdoor meetings arranged a successful season is anticipated.

**Greenock.**—The annual meeting was held on the 21st ult., Mr. T. L. Patterson occupied the chair. Messrs. John Campbell, John Macgregor, and Hugh Watson were unanimously elected members. Report by Council and Treasurer's statement were read and ordered to be printed. The following were appointed office-bearers for 1892-93, viz., President, Mr. James Graham; Vice-President, Mr. W. U. Park, M.A.; Council, Messrs. Hugh W. Walker, John Maclean, and James Wright; Treasurer, Duncan Nicol, and Secretary, William Blair. Mr. Patterson showed one of Hurter and Driffield's Actinographs, and fully explained the working of same. A cordial vote of thanks was awarded Mr. Patterson on his retreat from the Presidency. The first Saturday afternoon excursion was arranged for the 30th ult. The Secretary laid on the table a sample of rubber focussing cloth sent by the London Rubber Co., and a number of pamphlets, etc., from dealers and others.

**Hackney.**—The ordinary meeting was held last Thursday, when the American lantern slides were exhibited. Samples of the Imperial dry plates were handed to the members by the Hon. Secretary, with a request that results were shown and opinions given. The club album containing portraits of the members was placed on the table. The rest of the evening was set apart for sale and exchange of apparatus, the idea being that many members had things which were not of service to them, and an exchange would be mutually pleasing. The next meeting will be the annual general meeting.

**Holborn.**—On 29th ult., Mr. Fred. Brocas in the chair, Mr. R. Luxton gave a very interesting and instructive demonstration on "Photo-mechanical Work," this being, perhaps, one of the first of its kind ever given before a club of this description. Mr. Luxton showed the various stages of the process, viz., the making of the solution to coat the plate; secondly, passing the plate through a bath of acid and alum; third, coating the plate with albumen; fourth, printing on the zinc and developing the image; fifth, rolling up the plate for etching; and last, etching the plate. The demonstrator went through the different stages in their turn, showing very clearly the manner in which the work is done. He gave various hints which he had learnt from his long experience of the work, and thoroughly interested the members present with one of the most practical demonstrations which have been given before the club.

**Ireland.**—The usual meeting of the above society was held on 28th ult. Mr. J. L. Robinson exhibited some very fine lantern slides of English architectural subjects. Dr. Scriven illustrated the "High Alps," some of the pictures graphically showing the difficulties of Alpine climbing. A "Cytox" hand-camera was produced for inspection by the members.

**Leeds (Y.M.C.A.).**—The usual fortnightly meeting of this club was held on the 29th ult., when a discussion took place upon "Printing Processes." Mr. H. Eastwood, one of the Hon. Secs., submitted several specimens of Aristotype and Kallitype printing, which seemed to have given much satisfaction to the members present. Mr. J. Howarth also submitted some untinted silver prints. Mr. J. A. Noble spoke very favourably of bromide prints.

**Leytonstone.**—Lantern evening 27th ult., Dr. Pickett Turner in chair. Mr. D. G. Riddick exhibited by means of his magnificent triple lantern a set of American slides, kindly lent by the AMATEUR PHOTOGRAPHER, which met with evident appreciation from the members and the numerous visitors as well. There were also passed through a set of slides illustrating the scenery of the Broads, by Mr. Tom Symmons, some coloured slides by the President, and a number of slides and dioramic effects by Mr. Riddick.

**Liverpool (Am. Phot. Soc.).**—The ordinary meeting was held on 28th ult., Mr. W. Tomkinson presiding. Four new members were elected. The President announced that very satisfactory arrangements had been made with respect to the new club-rooms, and the work of fitting-up would be proceeded with as soon as possible. He also stated what had been done in the way of arranging excursions for the season, and gave an account of the annual dinner which had taken place at the Adelphi Hotel on Monday, the 25th ult. His Worship the Mayor was present on the occasion, and expressed his willingness to become a patron of the Association. The dinner was one of the most successful and enjoyable that had been held. Mr. J. T. Norman Thomas reported on the excursion to Crosby and Ince Blundell, at which upwards of eighty persons were present, and something like 450 exposures were made. Some of the work was on exhibition at the meeting and was of excellent quality. The AMATEUR PHOTOGRAPHER stereoscopic slides and monthly competition prints for January were exhibited during the evening.



Several novelties were shown and a number of members' slides were passed through the lantern, which was presided over by Mr. Phillips. On the motion of Mr. B. J. Sayce, the recommendation of the Council that Mr. H. P. Robinson be elected an honorary member of the Association was unanimously adopted.

**Liverpool (Camera Club).**—The usual meeting was held on the 27th ult., Dr. Webb in the chair. Continuing the series of "Half-hours with Elementary Photography," Mr. H. Handley gave an interesting and practical demonstration of the platinotype paper development by the hot-bath process. Mr. W. A. Brown followed, and explained the chemical changes that had taken place during the demonstration. Mr. Brown also explained the working of Messrs. Hurter and Driffield's Actinograph. There was a good attendance at the Club outing to Llangollen on Easter Monday. Over 100 plates were exposed, producing some good negatives, prints and platinotypes, of which were handed round for inspection and criticism.

**Newcastle-on-Tyne.**—The ordinary monthly meeting was held on the 25th ult., Mr. John Watson in the chair. There was a good number of members. The outdoor meetings were arranged, the places selected being Stocksfield, down the Tyne, Gilsland and Noworth, and Wark. Mr. F. Park then read a paper on "Enlarging," illustrating his remarks by a photograph of the apparatus employed, and by a series of finished enlargements of very superior qualities, afterwards developing several others by means of eikonogen.

**Phot. Soc. of Great Britain.**—Monthly technical meeting on the 26th ult., Mr. W. England in the chair. Mr. A. Mackie referred to variations that he obtained in the making of collodion emulsions, which were at the same time unaccountable and interesting. He exhibited a sample of collodion emulsion of the character he aimed to obtain, which gave a film of ruby colour by transmitted light. He also showed two other makes of emulsion made under the same precautions and practically with the same materials. The film of the first when wet was an apricot colour; when dry, bright blue. The other was blue when wet, and green when dry. He thought there was a good deal in the subject of the formation of bromide at the time of mixing which would repay investigation. He thought the peculiarities were probably due to differences in the pyroxyline. Mr. Stuart, referring to the preparation of lantern slides, considered collodion gave better colour than gelatine, and said that he had a number of slides made some thirty years ago which were as good as ever. He was glad to find that collodion had not altogether gone out of use. The Chairman said the colourists would not have anything to work on but wet collodion. They objected to collodion bromide. He asked Mr. Mackie as to the keeping qualities of plates coated with his emulsion. Mr. Mackie said he had kept plates for six or eight months without deterioration. The Chairman used collodion emulsion for two years, but could not get it to keep. It was made rapid for negative work. Mr. J. D. England said he had tested an emulsion made by Mr. Warnerke eighteen years ago, and found it gave very good results. The Hon. Secretary showed a number of plates prepared by Mr. Warnerke to illustrate experiments he had been making in order to see whether the mineralised methylated spirit was available for the preparation of collodion emulsions. Mr. Warnerke found that that prepared with the mineralised spirit was in every case more sensitive than the other, and appeared to possess no disadvantages to set against the extra sensitiveness, so that practically speaking the mineralised spirit was advantageous. Mr. J. D. England exhibited a sample of a new rollable film made by the Celluloid Manufacturing Company. The film was matt on one side, and could be supplied in 200 ft. lengths.

**Putney.**—Last meeting of winter session was held on 30th ult., Rev. L. Macdonald in the chair. There was a very fair attendance to witness the lantern slide competition, which resulted as follows: Class A: Landscape, (1) Mr. A. E. Smith, (2) Mr. Wm. Martin, jun.; Class B: Seascape, (1) Mr. A. E. Smith, (2) Mr. L. S. Zachariassen; Class C: Portraiture, etc., (1) Rev. L. Macdonald, (2) Mr. Wm. Martin, jun. Mr. Cembrano, of Richmond, kindly officiated as judge; lantern worked by Dr. W. J. Sheppard. Great satisfaction was expressed with the samples of the new Imperial dry plates; distributed at the former meeting, capital results having been obtained. The annual general meeting will be held on May 11th.

**Richmond.**—At the meeting on the 22nd ult., Mr. Cembrano in the chair, Mr. F. Hollyer gave a demonstration of platinotype printing with the new cold-bath paper. On the 29th ult. Mr. A. T. Hare exhibited an optical lantern, designed and made by himself, which presented many novel and ingenious features, and was adapted for every class of projection from the ordinary slide to the most delicate scientific experiment. Mr. Cembrano then gave an address on the subject of "Development en Route," setting forth the advantages of developing, at any rate, a good proportion of one's holiday pictures before returning home, explaining his *modus operandi*, and alluding to some of the difficulties he had met with, especially in French and Spanish hotels where water is doled out by the pint. Members made notes and resolutions, with what practical result the coming summer will show.

**South Manchester.**—The monthly meeting was held on April 25th, Mr. W. I. Chadwick in the chair. Messrs. J. J. Arnold, H. J. Reid, E. Tarbolton, A. E. Tysoe, and H. Worthington were elected members. Prints from negatives taken at the previous meeting by magnesium flash-light were exhibited, and one exposed by the Hibbard flash-lamp was pronounced decidedly the best, and proved to all present that, with judicious management and a little experience, admirable portraits were quite possible, as the exposure in this case had been quite sufficient. Other lamps of the duplex form were not considered to possess any greater advantages. Members had been invited to bring specimens of their work done during the Easter holidays, but owing to the shortness of the time not many results were shown. Mr. Chadwick exhibited about thirty stereoscopic transparencies made on Thomas's ground-glass plates and developed with eikonogen. These were handed round to the members with a suitable stereoscope. They were much admired, and it was remarked that an additional ground-glass backing was a wonderful improvement. One view in strong sunlight, taken "against the sun," Mr. Chadwick had printed very deeply, and, by the addition of a pale blue glass backing, a delightfully realistic moonlight view was the result. Another highly interesting slide was one taken from the Menai Suspension Bridge, showing the iron-work in the foreground with a landscape of the Straits in the distance, and demonstrated in a wonderful manner the great advantages of stereoscopic pictures over all other photographs. The whole of Mr. Chadwick's transparencies were printed by gaslight and developed in one evening. Mr. Bowden exhibited a lantern-slide which is intended for use in viewing lantern slides; but when a lantern slide and a stereoscopic slide from the same negative were compared, the difference was undoubtedly in favour of the stereoscopic one. An out-door meeting was arranged to take place on Saturday at Miller's Dale.

**Sydenham.**—An ordinary meeting was held on 26th ult., the President in the chair. Mr. Wiltshire read a paper on development, with demonstrations, which proved very interesting. He developed three plates, one very much over-exposed, one under, and the third was of an unknown exposure and was able to produce good printing negatives from all three, using pyro and ammonia developer, which he strongly advocated. On Tuesday May 10th the Platinotype Co. will give a demonstration of their cold-bath process.

**West London.**—At the ordinary meeting on the 22nd ult., the President in the chair, Mr. Roland Whiting read a paper on "The Artistic Improvement of Negatives." An interesting discussion ensued, which, together with the paper, embraced too wide an area to do justice to in a necessarily condensed report.

## SOCIETIES' FIXTURES.

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|-----|------------------------------------------------------------------------------------------------|
| May | 5.—LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.<br>Adjourned discussion on "Wet Collodion." |
| "   | 6.—CROYDON.                                                                                    |
| "   | 6.—LEWISHAM.—Exhibition of Hand-cameras.                                                       |
| "   | 6.—WEST LONDON.—Technical social meeting.                                                      |
| "   | 6.—HOLBORN CAMERA CLUB.—A. Horsley Hinton, "Motive and Method."                                |
| "   | 7.—SOUTH LONDON PHOTOGRAPHIC SOCIETY.—Excursion to Greenwich.                                  |
| "   | 7.—WEST SURREY PHOTOGRAPHIC SOCIETY.—Outing to Richmond Park.                                  |
| "   | 7.—LIVERPOOL CAMERA CLUB.—Excursion to Allerton—Leader, J. Smith.                              |
| "   | 9.—CROYDON.—"Development," by E. J. Wall.                                                      |
| "   | 9.—GRAPHIC (Plymouth).—Mr. Micklewood.                                                         |
| "   | 9.—HACKNEY.—"Platinotype Printing," J. G. Sinclair.                                            |
| "   | 10.—EAST LONDON.—American Slides.                                                              |
| "   | 10.—FAIRFIELD.—"Development," Practical Demonstration by J. L. Mackrell.                       |
| "   | 10.—P.S.G.B.—"Photographic Record and Survey," W. J. Harrison.                                 |
| "   | 11.—DURHAM CITY CAMERA CLUB.—Prof. Pearce, D.C., and of Durham University, paper on "Lenses."  |
| "   | 11.—LIVERPOOL CAMERA CLUB.—"Bromide Printing," C. and J. Trevor.                               |
| "   | 11.—PHOTOGRAPHIC CLUB.—Fancy Printing and Mounting.                                            |
| "   | 12.—LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION—Members' open night.                        |
| "   | 12.—HACKNEY.—Annual Meeting.                                                                   |
| "   | 13.—WEST LONDON.—Annual Dinner.                                                                |
| "   | 13.—LEEDS (Y.M.C.A.)—"Bromide printing."                                                       |
| "   | 13.—HOLBORN.—Discussion continued on "Exposure."                                               |
| "   | 14.—HOLBORN.—Official Outing to Epping Forest; meet at Chingford Station at 3 p.m.             |



## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns MUST be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance the number and full title of the query referred to.

### QUERIES.

5630. **Kings Popular Hand-camera.**—Can any readers of the *AMATEUR PHOTOGRAPHER* kindly give me any information concerning the above camera? Are the shutter and changing apparatus good and not likely to get out of order, and does the lens cover the plates well? Any information will be acceptable.—**A BRITISH WORKMAN.**

5661. **Isle of Man.**—Can any photographer who has visited this locality inform me which is the best photographic centre in the island, bearing in mind that I am not a good walker? Are respectable private lodgings to be obtained at such centre? What books are recommended bearing on the history, local customs, and antiquities of the island, so that I may know beforehand what to see and what to photograph, with a view to a lantern lecture? I hope to visit the island within the next three months, and will probably be able to spend a fortnight there.—**NOVOCASIRENSIS.**

5662. **Isle of Wight.**—As I am thinking of spending about seventeen days in the Isle of Wight in June and July, I should be very glad of any information photographic, including whether it is necessary to obtain permission to photograph at any of the principal places. Can Ilford plates be obtained at Ventnor? Will some brother amateur kindly help?—**II. R. T.**

5663. **Lens.**—Are the stop numbers engraved on Lancaster's half-plate Instantaneous lens correct? Is this lens suitable for instantaneous work, seascapes, shipping, etc?—**ALGOA.**

5664. **Thomas' Plates.**—Are Thomas' cyclist plates faster than the extra-rapid?—**ALGOA.**

5665. **Weights.**—Will some one kindly inform me if airoirdupois or apothecary's weights are used in photography, or are both used. The Ilford Manual gives both tables, and then in a note says apothecary's weight has gone out of use many years; but on asking for some weights at a photographic dealer's I am shown apothecary's weights, and am informed that they only are used; at the same time I am told an ounce of pyro does not contain 480 grains. As the difference in grains per ounce in these two tables is considerable, I shall be grateful for information.—**T. J. HOLLAND.**

5666. **Keeping Bath.**—Will any one please tell me how long sulpho-cyanide toning mixed as recommended for the Ilford printing-out paper will last?—**T. J. HOLLAND.**

5667. **London Parks.**—I shall be greatly obliged if any one can inform me if it is a fact that photographing is prohibited in all London parks, and if so, why.—**T. J. HOLLAND.**

5668. **Ilfracombe and Tenby.**—As I intend to visit these places for five or six weeks in June, I should be much obliged if some reader could inform me if there is a dark-room at each place available to amateurs for changing plates and developing. There is a full description of the scenery round Ilfracombe in this paper of June 7th and June 14th, 1889, but no mention of a dark-room.—**W. II.**

### QUERIES UNANSWERED.

- April 1.—Nos. 5555, 5568, 5570, 5574, 5577, 5578.  
 " 8.—Nos. 5588, 5593, 5603, 5605, 5607, 5621.  
 " 15.—Nos. 5625, 5628, 5629.  
 " 22.—Nos. 5641.  
 " 29.—Nos. 5642, 5646, 5647, 5651, 5658.

### ANSWERS.

5633. **Hand-Camera.**—I think you could not do better than have the Talmer. It costs £3 5s., but takes very clear pictures. My brother has one, and I have taken some very clear pictures with it.—**ALPHA.**

5536. **Exposure.**—I find Watkins' exposure meter gives for a landscape open view—with, say, for speed of Ilford plate 15, subject 49,  $f/16$ , actinic power of light 10, an exposure of 14 sec.—**II. D. BERKLEY.**

5643. **Hand-Camera.**—I have used one of Talbot and Eamer's guinea cameras with great success. It holds twelve quarter-plates, and has a finder, and time or instantaneous shutter. I do not think a better instrument can be had for the money.—**PRESTURBY.**

5644. **Yellow Stains.**—I use pyro, etc., in 10 per cent. solutions, and on the advice of our worthy Editor, make up the pyro solution as follows:—

|                                    |           |
|------------------------------------|-----------|
| Pyrogallie acid . . . . .          | 437.5 gr. |
| Metahisulphite of potash . . . . . | 437.5 "   |
| Water up to . . . . .              | 9 oz.     |

Since adopting the above and the acid fixing bath recommended some time since, I have never been troubled with yellow stains.—**A. W. COOK.**

5644. **Yellow Stains.**—"Amateur" had better try Edwards' clearing bath made as follows:—

|                            |       |
|----------------------------|-------|
| Alum . . . . .             | 1 oz. |
| Citric acid . . . . .      | 1 "   |
| Sulphate of iron . . . . . | 3 "   |
| Water . . . . .            | 20 "  |

After fixing and slight washing, the negatives are immersed in the above for one or two minutes; or else he may try Adams' brilliant, with which he will get full instructions. If the negatives are badly stained, probably the Platino-type Company's ferric oxalate would suit him best. Mixing sulphite of soda with the developer in the proportion of four parts to one of pyrogallol will obviate the yellow stains. Formula for this developer will be found in books on photography.—**J. G. P. VEREKER.**

5644. **Yellow Stains.**—Curing the yellow stains is difficult. Try a bath of alum 5 per cent., with citric acid 1 per cent., and wash well afterwards. Rather prevent the stains by making a solution of 3 or 4 per cent. of sulphite of soda, in which you dissolve the pyrogallie acid. But why do you use ammonia? Caustic potash or caustic soda, 50 per cent., would answer as well, and the development would very likely give you black or brown negatives with clear whites, especially if you add some drops of solution of bromide of potash (10 per cent.).—**KI-NON.**

5645. **Backgrounds.**—Unbleached calico should be freely painted over with following distemper:—

|                            |                       |
|----------------------------|-----------------------|
| Common whitening . . . . . | 1 lb.                 |
| Glue powder . . . . .      | $\frac{1}{2}$ "       |
| Traclea . . . . .          | $\frac{1}{2}$ pint.   |
| Water . . . . .            | $\frac{1}{2}$ gallon. |

Mix thoroughly, and add:—  
 Ivory black . . . . . 1 oz.  
 Ultramarine . . . . .  $\frac{1}{2}$  "  
 Red ochre . . . . .  $\frac{1}{2}$  "

Ground down into a very fine cream with water. It can be darkened or lightened according to amount of colour added. The colour is lighter when dry.—**INQUISITIVE.**

5648. **Wet Process.**—I think Jabez Hughes' "Manual of Wet Collodion" would suit you, price 1s.—**INQUISITIVE.**

5648. **Wet Process.**—Mr J. Sewell will find instructions for wet plate photography in "Instruction in Photography," by Captain Abney, published by Piper and Carter, London. Any of the older works on photography will also give details of this process.—**J. G. P. VEREKER.**

5649. **Washing Prints.**—Why do you not use Mr. Burton's method for washing albumenised paper? Alternately hot and cold water three times each, and afterwards leaving the prints an hour or so in cold water. After the fixing bath, immerse the prints in hot water, leave them there for five minutes, take them out one by one and put them in cold water, leave them five minutes; empty the water of the tank and fill it again with warm water after five minutes, get the prints out one by one, and put them again in the cold water tank, etc.—**KI-NON.**

5649. **Washing Prints.**—Use warm and cold water alternately, working with two dishes and transferring the prints from one to the other at each change of water. Whilst this transfer is being made, rest a plate of thick ground glass at a slight angle on the edge of the washing dish which holds the prints. Lay these one by one face downwards on the rough surface of the glass, and thoroughly roll them with the soft squeegee. The liquid pressed out falls back into the washing dish, and the squeegeed print is then transferred to fresh water, and the same process is repeated at the next change of water. Treated thus, prints are rapidly freed from all trace of hypo.—**INQUISITIVE.**

5649. **Washing Prints.**—"Trix's" method of washing seems quite in order, and the time taken is about right, but if there is any doubt about the thoroughness of the washing operation, it may readily be tested by applying the prints to the tongue, and if there are any traces of hypo left, the taste of the salt will be more or less *en evidence*. Tearing and bruising may be avoided by carefully separating the prints under water.—**T. DOWLING.**

5650. **Pinholes.**—Stop them out with Prussian blue or gamboge and gum water, applied with a camel-hair brush.—**T. DOWLING.**

5652. **Lake District.**—If "Anxious" will write to the proprietor of Swan Hotel, Newby Bridge, near Ulverston, he can arrange matters to his satisfaction, as special terms are being made for artists and photo-

graphers all the year round. Splendid pictures can be obtained in this part of the Lake District.—**RITA.**

5654. **Mounting.**—Back the prints with cartridge paper (as sold for engineering purposes), using any good mountant. I use Wormald's, which keeps well. Prepare some strong joiner's glue, and apply hot round the edge of the print. With practice, one gets into spreading the glue on the back only. Lay the print on the left hand, the thumb on top, and apply glue with a brush, directing it slightly from centre to margin. The glued part should not be more than  $\frac{1}{8}$  in. wide. All success depends on the temperature and consistency of glue, but when correct, the surface is maintained perfectly smooth and glossy. As the prints are mounted, lay them in a pile and place a weight on them. One to two dozen prints mounted in an hour by this process. Note:—To save trouble in hacking with cartridge, damp the paper with sponge on one side, apply mountant to the other, and also to hack off print as it lies on the glass, and squeegee lightly together.—**II. J. A.**

5654. **Mounting.**—A solution of indiarubber in benzole will be found a convenient way of mounting Aristotype paper. This is easily made, or can be bought ready prepared from Thomas and Co., Pall Mall. If made, it ought to be rather thin than otherwise. This mountant does not cause cocking, but the surplus benzole ought to evaporate before attaching the print to the mount.—**J. G. P. VEREKER.**

5654. **Mounting.**—Use indiarubber solution as the mountant.—**T. DOWLING.**

5655. **Toning.**—Be sure that your purple tone is really purple by transmitted light. Treat your prints to a bath of salt and water (1 to 50) previous to fixing, and have the latter bath distinctly alkaline.—**T. DOWLING.**

5656. **Ratio Aperture.**— $f/16$ .—**T. DOWLING.**

5657. **Plates.**—Ilford, and, I believe, Fry's plates can be obtained at A. P. Miller, chemist, Liverpool and Murray Street; also Anson's, photographers, Elizabeth Street. I fancy J. Walsh and Sons also stock Ilford plates. The above are in Hobart. I don't know where you would get them in Launceston. Try Walsh Brothers and Birchall. The atmosphere both on the voyage and in Tasmania is much clearer and the light better than in England, and I should think that Ilford ordinary would be the best and quite fast enough for ordinary use.—**TASMA.**

5658. **Hand-Camera.**—The Arcanum camera (Talbot and Eamer) has only one finder for horizontal pictures, but doubtless another could be added if specially desired. I have used one of these instruments with success. The price of the new pattern is 21s.—**PRESTURBY.**

5659. **Prints Curling.**—Try to iron the prints between two sheets of white paper, using an ordinary flat iron. That simple process is a substitute for hot burnishing, which diminishes the defect you complain of. You can also add some glycerine to the last water in which you wash the prints, but the glycerine can be a cause of little round stains on the proof after some time.—**KI-NON.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us before **TUESDAY MORNING'S POST** if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED. AM. PHOT.**

E. CLARK (SMYRNA).—We should recommend 2, 4, or 5. See the note in our last week's issue on Ross' concentric lenses.

C. T. RADCLIFFE.—(1) Wanting in contrast and sunshine. (2) Spoilt by the bit of tree. (3) Far too black, too deeply printed. (4) See note to No. 1; the lamp-post is not artistic. (5) Too black. (6) Good. (7) Good. (8) Ditto, but you want an opposing line to break the slope of the cliffs. (9) Good. (10) Wanting in sunshine. (11) Ditto. (12) Good. (13) Fair. (14) There is not enough in this to warrant you taking it; the house in the left-hand corner might have been made the principal object. (15) Far too dark, the figure was not wanted, and the white left-hand corner wants breaking up, which could have been effected by placing the camera more to the right. (16) What a pity to have cut off the children's feet! (17) Cut an inch off foreground and left side and half inch off right. (18) Very good. Your chief fault seems to be over-printing, or else printing in the sun. Your prints give us the idea that you use hydroquinone developer. Generally you have attempted too much, have got too much on the plate, and this is particularly noticeable in the Lynmouth view. Nos. 12 and 18 are the best.

J. N. K.—We cannot understand whether you get the powdery deposit on the negative or the print. If the former, it points to insufficient washing before using alum; if on the print, we should have to see a print before saying anything more. Write again and send up print showing fault.

R. G. HETHERINGTON.—(1) Too flat and grey, and the offensive wall should have been cut right off. (2)



Wants clouds, and the water is far too white. (3) Surely this would have looked better if taken the other way of plate; it is just waiting in the necessary brilliancy to give it sunshine. (4) Over-exposed and wanting in sunshine.

Mus.—Your work shows care, but in this bromide you have attempted too much; at least an inch could be cut off without any loss. This silver print is a little too dark, and the figure is out of place.

A. J. D.—All your prints are far too deeply printed. Surely it was not necessary to use green glass, and anyhow we should say it was too deep in colour. 1 and 2 are not over-exposed, though they give us the idea of being developed too much. If you wait the prints and squagges down again, the spots should disappear. Add the ammonia till the chrome alum becomes distinctly cloudy, then filter. Omission of the ammonia tends to give yellow prints.

W. WEBSTER.—(1) Fountain. Over-exposed, printed too deep, over-toned, and the camera was not upright. (3) Ditto; the wire railing is decidedly artistic. Do not be discouraged; let us see as much work as you like, but you are a long way off competition standard yet. Considering it is only the third time you have used the camera, you have no reason to be dissatisfied.

P. HILL.—Your report was probably held over from want of space. Let us have reports if possible by Monday morning, and then they are sure of insertion.

V. S. PICTOR.—(1) Very fair. (2) Ditto. (3) Cut an inch off foreground, and the lines of banks and trees converging to the centre is not good. (4) Cut an inch off foreground. (5) Ditto, over-exposed. (6) Ditto. (7) Spoilt in printing. (8) Ditto. (9) Too much foreground, print over-exposed, flat and poor. (10) This is the best print technically, but wants an inch off foreground; all your prints except 10 are over-exposed, fearfully flat and poor, and your weak point is inattention to the foreground. By raising the lens you would cut some of these uninteresting flat pieces off, and considerably improve the prints artistically. Let us see some more work soon.

W. J. GLOVER.—The only alternative you have is to paint the outlines of the print with sepia and gamboge, and then print in the clouds, but if you print from the landscape negative, and then paste it on to a sheet of non-actinic paper—we use for the purpose Wheeler's anti-halation ready-gummed paper—and then carefully cut out the outline, it is merely a case of careful adjustment of the mask to obtain good results. Keep on trying, it only wants practice. (1) There are two dirt streaks in left-hand corner, and the print is a little too black. (2) This is a little too grey, you want to hit the happy medium; place your printing frame further from the light, and add more bromide to the developer. (3) Very flat and poor, the negative wants intensifying.

MUDDLE.—The best way to turn negatives into positives is to place the negative in a printing frame as in ordinary printing; on the film lay a lantern or transparency plate—for thin negatives choose a chloride plate, such as Edwards's, Cowan's, England's, or Verel's; for ordinary negatives, a bromide plate like Mawson's, Fry's, Edwards's transparency, or Marlon's—then expose to daylight for chloride and gas for bromide, and develop with ferrous oxalate, fix, wash well, and dry. If you mean to turn the actual negative into a positive, wash free from hypo and then soak in—

|                                     |        |
|-------------------------------------|--------|
| Mercury perchloride                 | 40 gr. |
| Dissolved in pure hydrochloric acid | 1 drn. |
| Salt                                | 20 gr. |
| Sulphate of iron                    | 20 "   |
| Distilled water                     | 2 oz.  |

till bleached; wash, dry, and varnish with a good colourless varnish, then mount in contact with black velvet, or coat with black varnish. Your letter is not quite clear as to what you do want.

A. H. BATEMAN.—We should say that the subject is not an impossible one for plates. For instance, a Wratten ordinary backed should give you on a day without sunshine a good result.

J. S. T.—You give no information as to the composition of the toning bath, but from the print we should say you had been using the combined toning and fixing bath when the gold was exhausted.

H. B. WILDER.—For such special work as you require, any camera, preferably a square bellows kind, fitted with one of the focal-plane shutters, as made by the Thornton-Pickard Manufacturing Company or Loran's (Mawson and Swan, 33, Soho Square, agents), would be best. Write to either firm and tell them you want a focal-plane shutter to work up to 1/1000th of a second, and they could supply you. Then obtain one of Zeiss's Apochromatic triplets or Anastigmats Series 3. These will give you good covering power and large aperture, but you must not forget that increase of length of focus will increase your difficulties, therefore a 5 by 4 will be quite large enough to decide on. If you would write more fully, letting us know exactly what are the highest speeds you are likely to get your objects moving at, we will then write you by post more fully.

W. J. FARTING.—We are sorry you do not approve of our action in the matter of your letter. It will entail a lot of work on us, and it was only the fact that it would be of interest and benefit to a large number of our readers that induced us to accept the proposal. When benefiting or interesting a large

section of workers is in question, our own personal and unit opinions have to go by the board. The general good is the main feature of all our endeavours.

J. B.—The substance is acid sulphite of sodium; add 200 gr. to 8 oz. of hypo. We should prefer the Ross, unless you want to do portraiture, when the large aperture of the Zeiss would be of advantage. Ross's make would be quite as perfect as this original. We should use the 15 in. or 18 in. lenses in preference to these others for whole-plate.

H. S. W.—We should prefer No. 2 after having seen both. The extra chamber is part and parcel of the camera, and might be useful.

R. H. F.—We are afraid your print would come in Class 3. It is too stiff, and the sitters should not have been looking, both of them, into the lens. It is a little over printed, and wants an inch off the right side, and half an inch off the left. Considering this is your fourth attempt, the result is very encouraging.

J. THOMAS.—(1) No. 1 is quite as good as No. 2. (2) The lenses are both of same character and equal value. (3) Yes, the apparatus is reliable and good. (4) Yes. (5) Probably the omission was a clerical error. (6) We do not know the firm in question.

P. J. G.—Supposing your half-plate lens to have a focus of 9 in., and the whole-plate lens a focus of 12 in., it is obvious that you would, with the long-focus lens include far less subject on the same size plate. Probably, as you use with whole-plate lens only the centre of the field, you would not have to stop down so much. On the other hand, the shorter-focus lens has relatively a greater depth of focus. Practically, the focus of lens has very little to do with the excellence of results. This depends upon artistic feeling and careful technical work.

W. R. P.—(1) Use black needle paper, or, preferably, velvet. (2) Any soft lantern or transparency plate is the best for enlarging upon—e.g., Mawson, Fry, Marion, Edwards, Verel lantern plates. Almost any developer may be used, but for preference Rodinal, eikonogen, or pyro and ammonia, as with these the deposit of silver is of finer grain. A thin, delicate, or soft negative is what you want. (3) Use the developer recommended by the maker of the plates.

E. C. POSSIDYKE.—(1) There are no restrictions on general photography in Holland and Belgium; you would find innumerable notes in back volumes. (2) The best position and time of day to take the Crystal Palace depends entirely upon whether you want the front or the garden side, the Penge or the Sydenham end. Your best plan will be to take a walk round there one Sunday and see for yourself which is the best view and spot, and then judge the desired time.

BOTANY BAY.—(1) Marlon's Radial is the camera most likely to suit you. (2) The exposure might be reduced by one-third. Your more satisfactory plan would be to use Watkins' exposure meter. (3) On writing to the maker of clond shutter, he answered that he hoped to be in a position to supply in about three weeks. We send you post card with address.

J. LINGARD.—The lens named is capable of turning out good work, but we should certainly prefer a Wray or Taylor, Taylor and Hobson, or Crouch's. The question of stopping down in hand-camera work depends so much upon the class of subject that it is difficult to decide definitely—but you may take it as a general rule that it is necessary to stop down to f/11—and sometimes f/16. Loose stops may always be held in place by an india-rubber band twisted round the tongue of stop, and then slipped round lens tube; this is our method of using them. Always pleased to help you.

MISS L. RIDLEY.—The white rays on the print are caused by light having crept in at the top of the dark slide when the sliding piece is pulled out, and they are not due to the instantaneous shutter at all—this is proved by the fact of the rays proceeding from the two corners, and probably if the negative be held up with the film away from you, as it would be in the dark slide, it will be found that this is the case. The remedy is to obtain one of Manson's Sensible focussing cloths and tie this all over the camera and dark slide, and pull the sliding shutter out only under the cloth. The cause of the muddy prints is due to insufficient development—had you used pyro or carried the development a long way further, you would have got better results. Development has always to be carried a great deal further with hydroquinone than with pyro, the colour of the image being more non-actinic in the latter case. If you have any more such thin negatives, intensification will improve their printing power.

BLANCHE.—(1) There is no way of telling when the bath is getting weak, unless the prints are slow in fixing, and the only way to tell whether the prints are fixed is to hold them up to the light and see if they look clear. (2) Yes; the peroxide may be used more than once, but it is so cheap and the quantity used so small as hardly to warrant your saving it. If you develop your bromide prints with iron, there is obviously a chance of your not thoroughly washing out all the traces of iron—but your water is notoriously feruginous. Try soaking the print in oxalic acid 1 part, potassium bitartrate 2 parts, potassium quadrilateral (so-called) 2 parts, water 20 oz.

KI-NON.—Many thanks for answers and suggestions as to developing competition. The films named are quite equal to any dry plate in the market. The paper named for separating the exposed plates is absolutely harmless. With regard to the backing paper,

it is a deep-red paper gummed, but to absolutely prevent balaion you must have the backing of this same index of refraction as the glass plate, and M. Cornu suggests (*Paris Photographie*, No. 3, p. 101):—"On démontre en optique que la réflexion sur la surface de séparation des deux milieux se produit toujours lorsqu'il existe une différence entre les indices de réfraction de ces deux milieux; il suffit donc d'appliquer au revers de la plaque sensible un liquide ou un vernis ayant le même indice que le verre . . . on compose d'abord un mélange d'essences, environ six volumes d'essence de girofle et un volume d'essence de térébinthine. Ce mélange est alors versé sur du noir de fumée, de manière à former une pâte qui s'étend facilement sur le revers des plaques avec un pinceau ou un tampon de coton."

S. POLLARD.—Your fault is in not washing sufficiently after fixing and before using the alum. The slides should be washed for at least an hour.

R. P.—Letter by post.

C. E. WHITAKER.—References to print accidentally omitted.

MISS H. M. DIXON.—The omission was accidental: J. L. G.—Plain pyro always has a tendency to yellow stain. This can be removed by an acid alum bath. (2) We have no print from you.

W. WILSON.—John Dine and Co., Lindsay Hemery, Swanley Studio are all reliable, and turn out good work.

T. P.—(1) The only substitute for methylated spirits is pure rectified spirit of wine. (2) The Fry Manufacturing Company, 5, Chandos Street, Charing Cross, W. Sandarac may be obtained from any oil or varnish shop, or chemist's or photographic dealer's; price about 2d. per oz., 2s. per lb. (3) The best developer to use is the one recommended for the plates, and printed on the instructions enclosed with every box. (4) Bookbinders' cloth or leather. Apply to Platt and Witte, Birkbeck Works, Ridley Road, London, N., for samples and prices.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word: compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m. and other communications having reference to the *Sale and Exchange* column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the *AMATEUR PHOTOGRAPHER*, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Background.**—Two backgrounds for sale, mounted rollers, canvas, 8 by 8, Leaver's style, 40s. the two; photographs 3 stamps.—3, Waverhill Road, Handsworth, Staffs.

Background, interior, 8 by 8, cheap.—Ready, 10, Mount Street, Waltham.

**Bicycles, Tricycles, etc.**—Singer's 1892, cushion, diamond, ball head Safety, £8; approval anywhere.—Cyclist, 7, Dereham Road, Norwich.

**Cameras, etc.**—Camara, Lancaster's half-plate Instantograph with all the latest improvements, also two double backs for same, very little used, and stiff canvas case, 55s.—No. 287, office of this paper, 1, Creed Lane.

Best London-made half-plate camera, all movements, with three double-hinged backs, £3 10s.; case for same, 9s.—Gibbons, 32A, Lee Terrace, Blackheath, London.

Levi half-plate camera, three double backs, spring catches, new, £4; Watson four-fold stand, 12s. 6d. knapsack, waterproof divided case, 12s. 6d.—Harri son, Spring Terrace, North Shields.

**Cameras, Lenses, etc.**—Half-plate long-extensor camera, three book-form double slides, rapid rectilinear lens, in canvas case, complete, £4 17s. 6d.—Apply by letter, Smith, c/o Daintree and Co., 95, Mount Street, Grosvenor Square, W.

**Dark-room.**—Davenport's Ever-ready dark-room, lined, extra-deep sink, racks for trays with lead pipe



for water supply, cost over £2 10s. for 21s.—No. 284, office of this paper, 1, Creed Lane, E.C.

**Hand-Cameras, etc.**—For sale, Fallowfield quarter-plate Facile, R.R. lens, waterproof case, cost £5 10s., price £3.—Apply, C. Bagshaw, H. S. King and Co., Pall Mall, S.W.

Kodak No. 2, perfect order, for £4; deposit.—No. 279, office of this paper, 1, Creed Lane, E.C.

Kodak for sale. No 4 Junior, but little used and in perfect condition, contains film for about 20 exposures, price £8. Can be seen at 1, Creed Lane, E.C.—T. Evans, 3, Trinity Square, Southwark.

Kodak, nearly new, No 3 regular, £6 10s.—No. 283, office of this paper, 1, Creed Lane, E.C.

Presto camera, 4s. 6d., good working order.—Trevor Brodick, Alverstoke Rectory, Gosport.

Crouch's detective camera, covered Russia leather, perfect condition, takes 24 plates, only 3 guineas.—Address, G. Lyons, 19, Somerset Street, Portman Square, W.

Demon camera No. 2, cost 12s. 6d. Offers? or exchange.—A. Stammers, Long Melford, Suffolk.

Would exchange Griffiths' guinea detective for quarter-plate square bellows camera and slides; approval.—Pickin, Wharf Street, Stoke-on-Trent.

Lancaster's half-plate Rover hand-camera, carries 12 plates, fitted with See-saw shutter, iris diaphragm, new last March, perfect condition, £4 10s., or offers.—T. 72, Newtown, Whitehaven.

Hand-camera, time and instantaneous shutter, finder, rapid lens, holds 12 plates, new last February, £1.—E. H., 7, Nicholas Terrace, Lawrence Street, York.

Stereoscopic Company's Dispatch hand camera, six double backs, Newman's shutter, equal new, cost £12 15s., price £8.—Bygrave, 13, Canterbury Road, Brixton, S.W.

Shuttle hand-camera, new, £6 10s.; also Ideal, in good condition, cheap.—55, Great Sutton Street, E.C.

**Lantern.**—For sale, Optimus lantern, 4 in. condensers, 4-wick lamp, portrait combination objectives, 25s., or offers.—Watson, 154, Maxwell Street, South Shields.

**Lenses, etc.**—Lancaster's whole-plate Silver Ring, rapid rectilinear, 57s.—G. M. Forrest, Damacre Road, Brechin, N.B.

Portrait lens, Lerebours and Secretan, 15s., or exchange Thornton-Pickard time and instantaneous shutter, 20 or 21; also c. d. v. rolling press for sale.—A. 3, Queen's Buildings, Buckhurst Hill.

Lens, Optimus 7 by 5 R.R., almost new, will take 40s. cash.—No. 286, office of this paper, 1, Creed Lane, E.C.

**Rollholder.**—Eastman's latest pattern rollholder for 7½ by 5 camera, with two extra clamping reels, £2 7s. 6d., perfect; on approval; deposit.—No. 280, office of this paper, 1, Creed Lane, E.C.

**Sets.**—Half-plate Instantograph, two slides, lens, and shutter, in first-class condition, for sale. What offers?—De Gruchy, 212, Breck Road, Liverpool.

Lancaster's 1891 half-plate Instantograph camera, slide, tripod, rapid rectilinear lens, good as new, only 68s.—53, Slad Road, Stroud. [Trade.]

Whole-plate camera (Meagher's), Ross' lens, iris diaphragm, Newman's shutter, travelling bags and leather case, everything complete and in perfect condition. What offers?—Apply, Sarsfield, Chemist, Durham.

Quarter-plate Lancaster's International set, complete, six double dark slides, chemicals, and all accessories, list sent, £3; approval; deposit.—J. Wilks, The Tannery, Rickmansworth.

Shew and Co.'s whole-plate Tourist outfit, with extra-rapid rectilinear lens, only 10 guineas; 10 by 8 Studio camera, bellows body, dark slide and carriers, only 6 guineas; background, 8 by 7, vignetting and seascape, 12s. 6d. each.—Lawton, Darlington.

Half-plate camera, light pattern, three double backs, rapid rectilinear and wide-angle lenses, sliding tripod, pneumatic shutter, dishes, frames, £5; approval; deposit.—H. Brown, Lyneofit, Baintree.

Half-plate camera, new last year, best make, with all improvements, square leather bellows, three double dark slides and three double American dark slides, £5 10s.; canvas case for the above, 12s.; Optimus Euryscope lens, cover 7 by 5, £3 10s.; Taylor's rapid rectilinear, iris diaphragm, 6½ by 4½, £3; Taylor's mid-angle, half-plate, £3; for sale, together or separate. Developing trays, printing frames, etc., would be given to purchaser of the whole outfit. Can be seen by appointment any time.—Frederick Holmes, French Embassy, Albert Gate, London.

Half-plate Middlesize camera, Atkinson's R.R. lens, three double dark slides, Thornton-Pickard time and instantaneous shutter, Ashford's patent tripod, waterproof bag, three dishes, printing frames, all new last summer, price £8.—Apply, No. 282, office of this paper, 1, Creed Lane, E.C.

Lancaster's half-plate Instantograph, tripod, two slides, shutter, good lens, also quarter-plate Meritote. What offers?—Percy, 27, Blenheim Terrace, N.W.

Sands and Hunter's 5 by 4 Imperial camera, three double backs, Optimus R.R. and W.A. lenses, with canvas case, comp. etc., cash £6; Newman's whole plate shutter, 15s.; Houghton's changing tent, 12s.—Pratt, East Bridford, Notts.

Lancaster's half-plate International camera, Silver Ring rectilinear lens, wide-angle rectigraph, five dark slides, six printing frames, camera case, tripod, all in

good condition for £7; less than half-price.—Rev. J. Crossley, 157, Park Road, Bolton, Lancs.

Shew's quarter hand-camera, Taylor, Hobson 5 in. lens, D 7/5, iris diaphragm and mid-shutter, six double slides, finder, and leather case, bamboo walking-stick stand and top, cost over £12, £7 10s., or offers; deposit.—No. 285, office of this paper, 1, Creed Lane, E.C.

Hare's new form camera, and three double slides 5 by 4, in leather case, only been used twice, cost £9, £5 10s.; Eastman rollholder, 5 by 4, £1 17s. 6d.; Dallmeyer rapid rectilinear lens, £3; Thornton-Pickard shutter, 14s.—E., 26, Calthorpe Street, Gray's Inn Road.

Whole-plate camera, Gem, Sands and Hunter, three double backs, R.R. lens, same maker, iris stops, Thornton-Pickard shutter, time and instantaneous, three-fold tripod, waterproof canvas case with lock, condition as new, cost £20, sell for £12; also Mayfield and Cobb 3½ by 3½ ebonite camera with three double backs, lens, shutter, in leather case, Watson four-fold tripod, set complete, £3.—Bath, 5, Uplands Terrace, Swansea.

**Sundries.**—AMATEUR PHOTOGRAPHER, March, 1888, to June, 1891, six volumes complete, and nearly all Wall's "Dictionary." Offers?—Sharland, Santos Road, Wandsworth.

Roll of Eastman's transparent film, unopened, for Kodak 2, 100 exposures, cost 17s. 6d., for 11s.—No. 281, office of this paper, 1, Creed Lane, E.C.

Optimus gas lamp, triangular oil ruby lamp, three porcelain dishes, 8 by 6, two half-plate draining racks, 4 oz. dropping bottle, dusting brush, negative box, half-plate (50), inner frame, holds quarter-plates, 4 oz. measure glass, 1½ doz. 11ford half-plates, all in perfect order, must be sold. What offers in cash for the lot?—No. 287, office of this paper, 1, Creed Lane, E.C.

For sale, or exchange for electric light, plain neutral background on roller, half-plate Lancaster's instantaneous lens and shutter, and lot of sundries. First offer.—Dry, 22, Richmond Terrace, Clapham.

## WANTED.

**Cameras, Lenses, etc.**—Wanted, whole-plate landscape lens, Mulum-in-Parvo enlarging camera.—No. 284, office of this paper, 1, Creed Lane, E.C.

**Hand-Cameras, etc.**—Good hand camera, cash, or exchange diamond ring.—17, Sedan Street, Walworth.

Wanted, good hand-camera with automatic changing and focussing arrangement.—H. A., Meadowside, Cricklewood, N.W.

**Lenses, etc.**—Wanted, half-plate R.R. lens and shutter, together or separate, must be good make and cheap.—S. P. Roskelley, Horne Street, Winslow, Bucks.

Lens, quarter or 5 by 4, iris diaphragm, 4½ in. focus, large working aperture; state maker and full particulars.—Ivy, Romskirk.

Wanted, pair Optimus R.R. 5 by 4 lenses.—W. G. Perks, Cleveland, Walthamstow.

Wanted, whole-plate lens, rapid rectilinear or symmetrical, by good maker; approval; state lowest price.—Nelson, 45, Main Street, Egremont, Cumberland.

**Sets.**—Wanted, half-plate set, with rectilinear lens; will exchange new Rational bicycle, 52 in., or sell.—John Lowden, 37, Maryland Road, New Town, Stratford, Essex.

Wanted, Rayment's half-plate camera, Optimus rapid rectilinear lens, good tripod, and instantaneous shutter, cheap.—Walter Jones, Chelmsford.

Set, half-plate, first-class, state descriptive, makers, and price.—H. 34, Duncan Terrace, N.

**Sundries.**—Wanted for dark-room, lead lined developing sink and cistern, etc., also walking-stick tripod for hand-camera, backgrounds, and portrait accessories, and 12 by 10 dishes and sundries. Particulars and lowest price to H. A., Meadowside, Cricklewood, N.W.

**Bargains in Lenses.**—For sale, 15 by 12 Optimus wide-angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; Ross whole-plate actinic triplet, for large heads or groups, Waterhouse stops, take £4 15s.; whole-plate Optimus rapid rectilinear (by "Optimus") as new, guaranteed, Waterhouse grand definition, covers well to edges, £3 10s.; Portrait lens, cabinet size, rack focussing, finest order, take 17s. 6d.; half-plate Landscape (by Hinton), Waterhouse stops, as new, take 15s.; 7 by 5 rapid rectilinear lens (by Wood, Lord-street, Liverpool), Waterhouse, a really good article, warranted, 30s.; half-plate Optimus rapid rectilinear, Waterhouse stops, as new, 27s. 6d.; half-plate landscape lens (by Cox, Ludgate Hill), take 12s. 6d., guaranteed, also quarter-plate portrait lens, by Cox, Ludgate Hill, 15s.; half-plate landscape and view lens (by Pettit, London), fitted iris stops, covers well, splendid definition, 15s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; 5 by 4 rapid rectigraph lens, iris stops, cost 49s., take 25s., as new; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Hand Cameras.**—For sale, Ideal (by Adams), as new, very finest order, rapid rec-

tilinear lens, two finders, times and instantaneous shutter, take £4 10s.; Houghton's Automatic hand camera, 12 quarter-plates in case, rapid rectilinear lens, rotating stops, two finders, as new, £4 15s. lowest; Optimus magazine, quarter-plate, for horizontal or vertical pictures, carries twenty-three plates, Optimus rapid rectilinear lenses, finest order, take £5 15s.; London Stereoscopic Company's Despatch detective, covered black leather, fitted Stereoscopic Company's rapid rectilinear lens, Newman's shutter, two finders, three double slides, rack focussing, size quarter-plate, as new, take £6 6s., cost £10 10s.; Optimus magazine hand-camera, carries twelve quarter-plates, two finders, Optimus rapid rectilinear lens, as new, £4 15s., lowest; Griffith's hand-camera, three quarter-plate slides, good lens, etc., 17s. 6d., as new; Facile hand-camera, fine view lens, twelve quarter-plates, view finder, instantaneous shutter, take £2 17s. 6d. All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City.

**Cameras! Cameras! Cameras! Lenses! Lenses! Lenses!** and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

**Photographic Appliances.**—Accessories and apparatus by all the following makers are always in stock; call and inspect any article you may wish to purchase, and compare with different makers' goods, and you will be able to possess the best and most suitable article for your purpose. Special large selections of Lancaster's goods, all Optimus cameras or lenses, Talmer Hand cameras, Ideal Hand cameras, etc. All makers' plates, 11ford plates and papers, Page's plates, Thomas's plates, Fry's plates, Mawson's plates, silver papers, bags, cases, valises, 2-fold, 3-fold, and 4-fold stands, dishes, printing frames, etc., etc. Write for list to Manager, City Sale and Exchange, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium).

**Bargains in Cameras.**—12 by 10 Camera, all latest improvements, back extension, three double dark slides, fitted rapid rectilinear, Waterhouse stops, fine definition, and ash sliding stand, set cost £18 15s., take £12 10s.; grand outfit, 10 by 8 camera, by Morley, Islington, double extension leather bellows, three double and two single slides, fitted Lancaster's lens, rotating stops, in finest order, £5 15s.; whole-plate camera, by Parker, Holborn, for wide angle, exquisite workmanship, all improvements, beautifully light, three slides, fine rapid rectilinear lens, also by Parker, three-fold stand and solid leather case, quite new, take £11 11s.; whole-plate Underwood's Instanto camera, all improvements, camera, lens, blind shutter, double slide, folding stand and case, as new, £4 17s. 6d.; ½-plate fine Spanish mahogany camera, back focussing, for wide-angle, finest leather bellows, rapid rectilinear lens, iris stops, by Mallett, three double slides and three-fold ash stand, as new, take £4 17s. 6d., worth £10 10s.; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s., worth £5; half-plate Lancaster's Instantograph, 1891, warranted as new, with all improvements, including camera, Instantograph lenses, iris stops, instantaneous shutter, double slide, and folding stand, take 72s. 6d.; camera combination quarter-plate and half-plate in one, eleven slides, four-fold stand, two cases, eight by five rapid rectilinear lens, iris stops, 7½ by 4½ wide angle lens, also landscape lens, all by Taylor and Hobson, and accessories, the lot as new, cost £30, take £15; grand outfit half-plate set by Wynne, of Holloway, camera best leather bellows, back extension, etc., three double dark slides, rapid rectilinear lens by Wynne, iris stops and folding stand, £5 10s., cost double, warranted as new. Lancaster's stereoscopic Instantograph, as new, two double slides, 6½ by 3½ instantograph lenses, instantaneous shutter and folding stand, take £3 17s. 6d., quarter-plate Le Meritote set complete, camera, lens, slide and stand, 21s. lowest; also quarter-plate Instantograph set, as new, including camera, three slides, lens, shutter, folding stand, and case, all latest improvements, 37s. 6d. lowest; 5 by 4 camera by Rouch, Spanish mahogany, reversing, fitted Riley rectilinear lens, three double slides, and folding stand, take 50s., cheap; Lancaster's special patent quarter-plate camera, best leather bellows, reversing back, brass bound, fitted rapid rectilinear lens, double slide, and folding stand, 55s. All above warranted in every detail. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**M. R. VAN DER WEYDE** wants a Gentleman for his Reception Rooms and Correspondence; must be an Experienced Salesman.—182, Regent Street, W.



# The AMATEUR PHOTOGRAPHER

Telephone No. 1645

Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

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FRIDAY, MAY 13, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—"Optimus" Competition—Ives' Lectures—Monthly Competitions—Major Bruno's Articles—Holiday Haunts.

LEADER.—Notes on Enlarging.—VIII.

LETTERS.—Monthly Competitions (C. E. F., Robin, Wavertree)—P. S. G. B. (Chapman Jones)—Pink Prints (Bottomley)—A Suggestion (M. M. E.)—The Blister Fiend (Anti-Blister)—Geological Work (Powell)—Depth of Focus (An Enquirer).

ARTICLES.—Elementary Photography (Hodges)—Silver Printing (Goddard).

ILLUSTRATED SUPPLEMENT.

SOCIETIES' MEETINGS.—Accrington—Bath—Brixton—Darlington—Eastbourne—Edinburgh—Glasgow—Holborn—Ilkestone—Lewisham—Lewes—Moston—N. London—Richmond—Rotherham—Sheffield—S. London—Southport—Tunbridge Wells—W. Surrey.

APPARATUS.—Eclipse Changing Bag (Beresford)—Portable Dark-Room (Overend)—Simplex Camera (Dolland)—"Optimus" Novelties—Radial Hand-Camera (Marion)—Hunter's Perfect-Light Filter.

CATALOGUES.—City Sale and Exchange—W. Watson and Sons—Wood Bros.—S. B. Hardcastle—Smith—Fallowfield—Underwood.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

### TERMS OF SUBSCRIPTION—

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TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE AND EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

"Amateur Photographer" Monthly Competition No. 36.—"SEA PIECES AND RIVER SCENERY." Latest day, May 30th.—Prizes: Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, June 17th.)

THE entry forms for the "Optimus" Competition are now ready, and will be forwarded on receipt of stamp. All applications to be marked outside "Optimus."

CONSIDERABLE interest appears to be attached to Mr. F. E. Ives' demonstration on "Photography in Natural Colours," at the Royal Institution, and, as usual, the lay press is full of startling paragraphs as to the discovery of photography in "natural colours" at last. We shall endeavour to give a *resumé* of Ives' process next week, if possible.

WE have received a very large number of letters on the subject of our "Monthly Competitions," and the idea of dividing the prints into classes seems to meet with general approval. Many of our correspondents seem convinced that the details as to the plate, exposure, etc., are not of general interest, and could well be omitted, so that we may see our way to give brief criticisms on, say, 100 prints, this being dependent, however, solely on the space occupied by the same. If we find that even this method absorbs too much space, we shall cut it down.

NEXT week we shall commence the first of a series of short notes on "A Universal Hand-Camera," by Major W. H. Bruno, who briefly described a camera of his own invention in a letter, p. 302, April 15th, 1892. We received so many enquiries that we have prevailed upon Major Bruno to write a full description, with working drawings and details of cost, etc.

NEXT week we commence our usual articles on "Holiday Resorts and Photographic Haunts," and we shall be glad to receive brief accounts, and will ask our readers to kindly contribute short articles upon places of interest to the photographer. The following simple rules will help contributors:—

- (1) The best starting point, the nearest large town.
- (2) Distance to places, and objects of interest.
- (3) The best route, conveyance, and cost.
- (4) If permission to photograph be required.
- (5) The situation of the subject, and at what time the light is most suitable for securing a photograph.
- (6) The nearest "Dark-room" available.

Contributions should not exceed 500 words, must be legibly written on one side of the paper only, and no attempt should be made to give discursive accounts of the objects to be photographed, but each account should be practical and brief.



## NOTES ON ENLARGING.—VIII.

## DEVELOPMENT, CLEARING, AND FIXING.

THE paper has been exposed, and our developer made, and we are now ready for the all-important operation of development; but before giving directions for this procedure there are one or two little points which it will be well to explain. It is advisable to have four or five dishes, and the most convenient are the deep porcelain kind. *Dishes used for ferrous oxalate development must be used for no other purpose; dishes which have been used for pyro, quinol, eikonogen, or fixing must not be used, or stains will probably occur.*

The dishes must be absolutely clean, and so must the measures and hands. Hypo must not be touched till the whole developing has been done and the developer and developing dish put away. *Distilled water must be used for all operations prior to clearing.*

After these important points have been observed, the operator may reasonably expect good results, provided the exposure and development are correctly carried out. It is advisable to have four or five dishes, but shift may be made with a less number, or home-made dishes may be constructed. Keep one dish solely for the developing, and mark it in some way that it may not be used for any other purpose. Mark the bottom or side of the dish with black enamel with OX, so as to distinguish it easily. Arrange three or four dishes side by side. Into the first pour distilled water till about one inch in depth; into the second, third, and fourth a clearing solution is poured to the depth of one and a half inches. The clearing solution is made as follows:—

|                 |     |     |     |        |
|-----------------|-----|-----|-----|--------|
| Acetic acid     | ... | ... | ... | 1 drm. |
| Distilled water | ... | ... | ... | 32 oz. |

At least six pints of this solution should be made. The hypo or fixing bath should not be touched or measured out till the whole of the developing is completed.

Now take an exposed piece of paper and lay it face downwards on the distilled water, and as soon as the edges begin to curl up lift the sheet of paper, turn it over, and immerse it bodily in the water, and allow it to soak till limp, then pour the distilled water off into a jug or other convenient vessel, and flood the paper with the developer in one even sweep; rock the dish till the image begins to appear. Allow the development to continue till the picture appears dense or black enough in the shadows, when by this time, if correctly exposed, the half tones and high lights will be full of detail. At this point, then, the print is raised from the developer and immersed at once, *without draining or washing*, into the first dish containing the clearing solution, and this dish is then rocked once or twice, and allowed to remain quiet.

The developer is now poured back into the measure, and the developing dish rinsed out with a little distilled water, and drained again, filled with distilled water, and another exposed sheet of paper treated just like the one as described above; but while the paper is soaking in the developer, the already developed print is raised from the first clearing bath, drained slightly, and immersed in the second clearing bath. Attention is now turned to our developing print, and when this is developed sufficiently it is placed in the first clearing bath like the first print, *without draining and washing*.

We now proceed to treat our third print in like manner to the first two; and as soon as placed in the developer the first print is removed from the second clearing bath and placed in the third, the second print is placed in the second bath, and this leaves the first bath ready for the third print. When three prints have been cleared in the first bath it is poured away, and the second bath put in

its place, the third in the place of the second, the first dish now being in the third place, and filled with fresh clearing solution. The second and third baths, which have now become the first and second, are treated in a similar manner.

It is always as well to use a good quantity of developer, as it can be used for two or three prints, or even more, without any loss of detail, provided one-fourth of it is poured into a bottle, to be treated as advised in the leader of the AMATEUR PHOTOGRAPHER, p. 354, and replaced by freshly mixed developer. The used developer need not be thrown away, but placed on one side and regenerated.

Having finished our development, the developing dish is washed, dried, and put away. The prints still in the clearing baths are placed in one dish and flooded twice with fresh clearing solution, the solution being allowed to act for one minute each time, and then well washed for at least half an hour in five or six changes of water, preferably one hour in ten changes of water. The print is then ready for fixing, which may be effected by immersing for ten minutes in

|                       |     |     |     |         |
|-----------------------|-----|-----|-----|---------|
| Hypo sulphite of soda | ... | ... | ... | 3 parts |
| Water                 | ... | ... | ... | 20 "    |

The print should be then taken out, drained, and washed at once, or preferably placed in a second fixing bath of the same strength as the above.

For washing the prints any of the usual washing tanks may be utilised, or the prints may be placed in a dish, and washed by changing the water every ten minutes for at least two hours.

## Letters to the Editor.

### MONTHLY COMPETITIONS.

SIR,—As a competitor in your Monthly Competitions for over two years, and not yet even got a bracket, I think it only fair to yourself and your staff that the amateurs of the world, instead of growling and grumbling at the awards given, as some do, would put themselves into your place, they would feel that the criticism and awards are not child's play, but honest hard work, in coming to the conclusions, as per your supplement month after month.

I am still in hopes of being in the first three some time, and the many fair criticisms on my pictures have only helped to make me try and do better each time I compete.

Now, Mr. Editor, as I understand it, these competitions are for the advancement and encouragement of the amateur who is a consistent worker, and not of the butterfly tribe, and I consider our thanks are due to you for giving us the chance of seeing if our work is on the upward tendency or the reverse.

Rome was not built in a day, and you can't make a good photographer in a few weeks or months it takes years to be *par excellence*, and many of the letters I have read *re* your criticisms, always seem to point to sour grapes and wounded vanity. That I take is not the true spirit an enthusiastic and careful worker in photography should adopt.

Mr. W. H. Bibby's idea is not bad, but you know best how to deal with these matters, and the difficulty in judging 260 separate pictures. Wishing you every success in your future competitions, I remain yours faithfully,  
GEO. L. SNOWBALL.

SIR,—You request the opinion of your readers on the question of the curtailment of the Monthly Competition print criticisms. In my opinion such a measure will be a boon both to yourself and your readers. The labour you have undertaken is very great and ought not to be rendered intolerable. Your suggestion of dividing into three classes and omitting criticism of the third, appears a good one. There is not much gain for anyone in special criticism of very inferior work, and it is enough for those who produce it to know that they must improve themselves to a higher standard in order to obtain detailed recognition.

In view of "the ever-increasing number of prints sent in," I feel some compunction at having forwarded to you, though for the first time, a print for the April competition.—Your, etc.,

C. E. F.



SIR,—My view is that the criticisms of the prints sent in to your "Monthly Competitions" should (even if you decide not to criticise the third and worst lot) take the form of a Special Supplement, for which an extra charge of 1d. should be made. Perhaps those of your readers who have been photographing for years would not buy it, but surely the competitors and beginners (and their name is legion) would. Personally I find the criticisms instructive, interesting, and (not being at present a competitor) decidedly amusing.—Yours, etc., ROBIN.

SIR,—I am glad to see criticism on the above. First, this paper is not a grammar book. I consider it very bad taste on Mr. Harman Orr's part to criticise Mr. McEwen's letter from a grammatical point of view.

I certainly think the judges have made a mistake. No. 3 should have second place—quite worthy of it.

If I may criticise, I should say, No. 1 is no doubt a picture. No. 2: The lighting is good, but the legs of the girl are badly placed; next, the expression is not good. Mr. McEwen says something about laughing. Well, I don't think so; I fancy the artist has been trying to make the little girl look pleasant; in doing so, has overdone it.

No. 3 is better than 2, although the features here are strained; nevertheless a study, and worthy of second place.

No. 4 is good, but the figures standing up are bad, especially one; the artist might have made use of the gate; also one or two faces are hidden in grouping. No. 5 is a good portrait, but of interest. No. 6 I think might have been left out.

We competitors, Mr. Editor, ought to know who the judges are. I am sure it would give greater satisfaction to some.

Let us have no ill-feeling over the matter. If I were Mr. Orr, I should feel proud that my picture had received so much criticism.—Yours, etc., WAVERTREE.

[Letters on this subject have also been received from Miss E. Dillon, Messrs. Meynell, Solton-Symons, G. S. Williams, F. L. S., G. W., J. H. C., and others. This subject has, we think, now been fairly well ventilated.—Ed.]

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#### PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN.

SIR,—Will you please allow me to inform your readers that Mr. A. Dawson, of the Typographic Etching Company, has kindly consented to deliver a lecture on "Photogravure," at the rooms of the Photographic Society of Great Britain, 50, Great Russell Street, Bloomsbury, on Tuesday, May 17th, at 8 p.m. All those who are interested in the subject are invited to be present.

The Assistant Secretary has organised a small exhibition of photogravures by English and foreign firms. These specimens will be on view from May 17th for a few days.—I am, yours, etc., MAY 6th, 1892.

CHAPMAN JONES (Hon. Sec.)

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#### CAMERA CLUB FOR NEWTON ABBOT AND DISTRICT.

SIR,—Will you allow me, through the columns of the AMATEUR PHOTOGRAPHER, to call attention to the fact of several gentlemen endeavouring to form a photographic association for this town and district. Preliminary steps are being taken, and a meeting will be held during the coming week to make the necessary arrangements, and I should feel obliged if any photographers, either amateur or professional, in the neighbourhood, would write me signifying their willingness to become members of the proposed society.—Thanking you in anticipation for insertion, I am, yours, etc., H. ROWLAND.

21, St. Leonard's Terrace, Newton Abbot.

\* \* \* \*

#### PINK PRINTS.

SIR,—I shall be much obliged if any of your readers can inform me why some Aristotype prints, which I toned in gold and sulpho-cyanide of ammonium, turned quite pink. They were quite white when they came out of the toning bath, and I put them into water so that they should all go into hypo together. When they came out of the water they were quite pink and remain so. I also toned some gelatino-chloride paper, which was quite white.—I am, yours, etc., J. F. BOTTOMLEY.

May 5th, 1892.

\* \* \* \*

#### A SUGGESTION.

SIR,—Although I cannot lay claim to being an "experienced amateur, I should like to notice the letter of "A Novice" under the above heading.

As a panacea for the trials and difficulties experienced by your correspondent, I would advise him to join some photographic

society. I know nothing of the People's Palace Society to which he refers. But having been a member of the East London Photographic Society (Town Hall, Shoreditch) for a few months, I am convinced this society fully meets all the wants "A Novice" refers to. Besides the valuable information one gathers from the papers read, and the discussion which inevitably follows, the society appoints a competent member to give practical instruction for one hour previous to the ordinary meeting, for the especial benefit of beginners.

If "A Novice" or any other reader of the AMATEUR PHOTOGRAPHER desires further information respecting this excellent society, I have no doubt the Hon. Secretary, Mr. M. A. Wilkins, 21, Ferncliff Road, Dalston, N.E., would give full particulars.—Yours, etc., M. M. E.

\* \* \* \*

#### THE BLISTER FIEND.

SIR,—For the consolation and information of your correspondent, "H. S. Large," I may say that I have found a pretty certain preventive of blisters, before adopting which I was about as good a hand at producing them as himself.

I keep the following stock solution:—Common salt, 4½ oz.; strong liquor ammonia, 1½ drms.; water, 18 oz. Of this I take 1½ oz., and add water to make one pint, into which the prints are put out of the toning dish and allowed to remain fifteen or twenty minutes. The prints are then passed (without any washing) into the hypo fixing bath, and when fixation is completed, back into this solution again (without any washing). Allow them to remain here about ten minutes, and then place under the tap, allowing a small stream of water to run so as to change the water gradually before proceeding to wash thoroughly in the usual way.

Since adopting this plan I have not had a dozen blisters out of a couple of hundred prints. It is now quite the exception for me to have any at all, whereas it used to be just the reverse. I use the Blackfriars Sensitising Co.'s paper almost exclusively, as I find it answers admirably when treated thus. Some double albumenised paper I used resulted in blisters, despite the use of the salt solution, and from what I hear most of these papers are prone to this in the best hands.

I hope these practical observations on this troublesome "fiend" may be of use to many of your readers, besides your inquiring correspondent.—Yours, etc., ANTI-BLISTER.

\* \* \* \*

#### GEOLOGICAL WORK.

SIR,—I should like to draw attention to the fact that the widening of the Great Western Railway gives an opportunity of securing photographs of a very interesting section of the chalk, with flints *in situ*, in the cutting between the old station at Moulsoford and the new one at Cholsey. The cutting is well worth photographing almost from one end to the other, but should be visited without delay, before vegetation and rain interfere with its surface.—Yours faithfully, T. H. POWELL.

May 9th, 1892.

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#### DEPTH OF FOCUS.

SIR,—With great interest I have studied the various articles that have appeared in your journal on "Photo Optics;" and your remarks on the new Concentric lens, that it gives far finer definition and depth of focus than lenses of the ordinary type, again suggests the problem, "What are the factors that control the depth of focus of a lens?"

Of course, we know that the focal length of the lens and the size of diaphragm used influence the depth of focus to a great extent, and on these two factors rules have been laid down for calculating the exact extent of the depth of focus.

But, Sir, may I ask, are these the *only* factors which so influence it; if not, what are they?

I think you will admit that, given two lenses of identical focus and aperture, one may give a vastly superior "depth" than the other. If such is the fact, then the rules given for finding the extent of the depth of focus by the two factors stated above are unreliable.

May not the densities, refractive properties, colour, and other qualities of the glasses used in the combinations, as well as the curvatures of the surfaces, in many ways influence the extent of the "depth"?

Perhaps Mr. Leaper, Mr. Wall, or some other of our able writers, will give their opinions on the subject.

Thanking you, in anticipation for inserting this letter, I am, Yours truly, AN ENQUIRER.

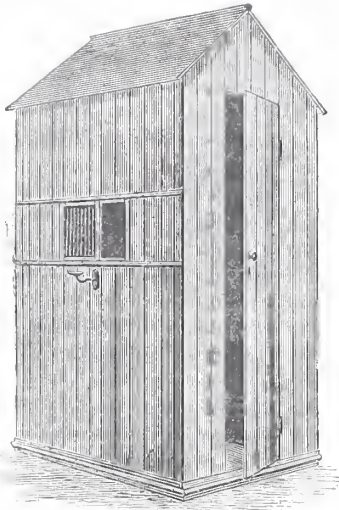


## Apparatus.

### THE ECLIPSE CHANGING BAG.

MR. F. BERESFORD, of 14, Bridge Road West, Battersea, London, S.W., has now introduced a useful and practical addition to this well-known and almost indispensable adjunct to the travelling photographer's outfit, namely, three internal pockets, in which exposed and under-exposed plates or films, carriers, or dusting brush, etc., can be carried with perfect safety.

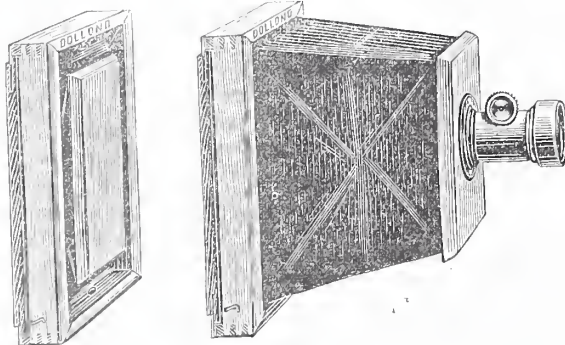
### PORTABLE DARK-ROOM.



MESSRS. A. OVEREND AND Co., of West Green Works, Tottenham, London, N., are making a very good portable dark-room, shown in the accompanying illustration, and which they have called "Maison Noir." It is painted inside and out, fitted with sink, shelves, sliding shutter, and lamp bracket, and is placed free on rail for 50s. Messrs. Overend and Co. being large manufacturers of greenhouses, etc., are in a position to offer exceptional terms for studio building, with first-class workmanship and material.

### THE "SIMPLEX" POCKET CAMERA.

DOLLOND AND Co., of 35, Ludgate Hill and 62, Old Broad St., E.C., have introduced a very light and inexpensive pocket camera, which closes up to 7-8ths of an inch, and immediately springs out and forms a very rigid, firm camera weighing only 7 oz. The camera is sent out with one dark-slide at the low price of 25s., and there are two screw holes for attachment to a stand. A good R.R. fitted with rack and pinion is provided if desired, or the operator may use it as a fixed-focus camera with a lens of about  $4\frac{1}{2}$  in. equivalent focus.



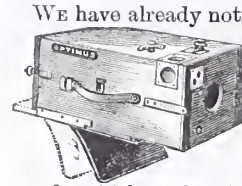
With reference to our notice of Messrs. Dollond's changing bag on the 29th ult., we omitted to state that one of the chief features is that the nose and mouth of the operator are not inserted in the bag, therefore he is not gradually suffocated.

### THE CYCLIST'S CAMERA.

PERKEN, SON, AND RAYMENT, of 99, Hatten Garden, E.C., are issuing a very neat little camera for cyclists and lantern workers, size of plate  $3\frac{1}{2} \times 3\frac{1}{2}$ . The camera, which is covered with leather, measures  $5 \times 4\frac{1}{2} \times 4\frac{1}{2}$ , and the dark slides are carried inside the camera. It is fitted with either an R.R. working at  $f/8$  or the rapid euryscope of  $f/6$  aperture, and  $3\frac{1}{2}$  in. focus, and both give excellent definition, the great desideratum for lantern slides or enlargements. The dark slides are inserted from below, and there is therefore less chance of light getting in on pulling out

the slide. A focussing screen and stand attachment is also provided, and a drop shutter with varying speeds is fitted to the front.

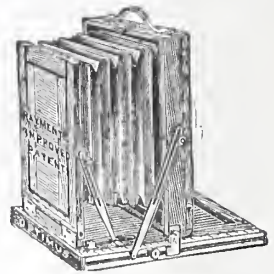
### THE "MINIMUS" CAMERA.



We have already noticed this ingenious little camera, but an improvement has been introduced in that the bag for receiving the plate is now underneath, and the camera has been covered with leather, making it less conspicuous. An automatic register shows the number of plates exposed, and a curtain shutter with varying speeds, which works without vibration, is attached.

### IMPROVED RAYMENT CAMERA.

The well-known "Rayment" camera has also received some improving touches. The front is instantly attached to the baseboard by two spring catches which enable the lens board to be securing parallelism with the screen, or also serve as axes to swing the front on if required. The rack and pinion are at once thrown out of gear, thus enabling the camera to be opened or closed with great rapidity. For fine focussing a slight touch on the pinion instantly sets in gear again for the final adjustment. As will be seen from the illustration, the back slides forward for very wide angle or short focus lenses, but when in its normal position at the back, with the front fully racked out, there is a very long extension of bellows. The camera is of excellent workmanship and finish, very light and yet rigid and firm, and the beautiful marking of the wood is a characteristic of most of this firm's wood.



### THE "RADIAL" HAND-CAMERA.

MARION AND Co., of 22 and 23, Soho Square, the makers of the well-known "Radial" Hand Camera, inform us that the many enquiries for othersizes have induced them to introduce it in lantern size,  $3\frac{1}{2}$  by  $3\frac{1}{2}$ , and half plate, both carrying 12 plates. The  $3\frac{1}{2}$  or lantern size is very light and compact, and very suitable for ladies, whilst the half

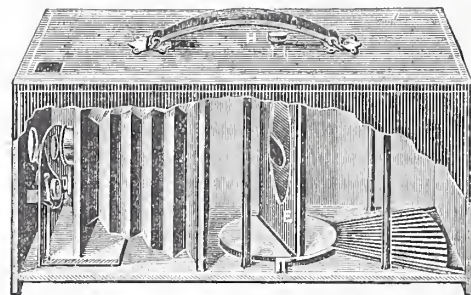


FIG. 1.

plate is far lighter and more compact than a folding camera with six double backs.

The camera, with one side removed to show the internal fittings, is shown in fig. 1. No. 2 shows the interior cross section, and No. 3 the fittings on the base. From these illustrations it will be seen that the camera takes the form of a small leather case, carrying inside a bellows, to one end of which is affixed the lens, which is racked in or out by means of the pointer working on a circle D (fig. 3), which is marked for varying distances. At the other end of the case are a series of radiating grooves, into which the plates are inserted by standing the camera on end, and removal of the back and inner screen. Each groove is numbered so that any rapidity or brand of plate can be used. To bring the plate into position, the camera is held with

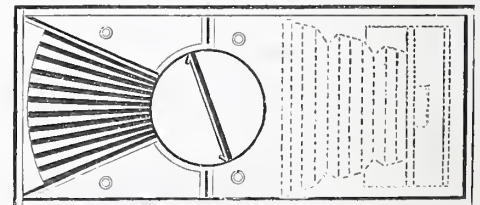


FIG. 2.



the lens pointing up the indicator, A is moved till it corresponds with the desired number on the circle, then a slight turn of the milled head, H (fig. 1) opens the groove, the plate drops into its holder, and the indicator is then turned round to the notch marked "to expose;" all is ready for exposure. Having recorded

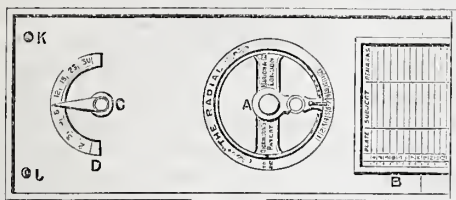


FIG. 3.

the exposure, the plate is returned to its groove by a repetition of the above movements. The shutter is variable, and a special safety screen is provided, so that no light has access to the camera whilst setting. The lens is easily got at for cleaning, etc., or changing the diaphragms. Two carefully adjusted finders are also included, and the whole forms a first-class and ingenious outfit, very suitable either for snap shot work or time exposures with a stand. The price too is very reasonable, viz.:  $\frac{1}{4}$  plate, fitted with R.R. lens and covered in morocco, £7 15s.

### HUNTER'S PERFECT-LIGHT FILTER.

HUNTER AND Co., of 28, Norwood Road, Herne Hill, London, have sent us a sample of a new dark-room medium, which, after a severe trial with rapid plates, we can safely recommend. It gives a very rich orange light, and yet enables one to see well in any moderate-sized dark-room, and one is thus enabled to move about with ease and safety. Using it for colour-sensitive plates, we have found that with two thicknesses, and shielding the plates from any direct light, it was possible to develop the most rapid plates of this class without the slightest sign of fog.



## Catalogues.

THE CITY SALE AND EXCHANGE, 54, Lime Street, and Leadenhall Street, E.C.

We frequently have enquiries for information as to the hire of hand and ordinary cameras, and in the above are offered several well-known hand-cameras and larger complete sets with lens, dark slides, and stand complete and ready for use.

W. WATSON AND SONS, 313, High Holborn, London, E.C. (two doors from Chancery Lane).

It hardly seems necessary to do more than draw attention to the issue of another, and the nineteenth, edition of Messrs. Watson's catalogue. The very fact of its being the nineteenth shows that it is well known. However, in the eighty-eight pages we find the necessary information as to photographic requisites for all branches of photography, including photo-micrography and astronomical work. Messrs. Watson particularly draw attention to their cash discounts.

"PAUSDONOPTIC," WOOD BROS., 71 and 73, Lord Street, Liverpool; wholesale house, 14, Bartlett's Buildings, London, E.C.

A well compiled and illustrated catalogue brought well up to date, and containing prices, etc., of all photographic and lantern requisites, a special feature being the "Pausdonoptic" cameras and lenses.

S. B. HARDCASTLE AND Co., 71, East Street, Brighton. Price 2d.

A well-compiled price list of over sixty pages, containing illustrations of all the latest appliances, at reasonable prices for cash. The list is well-printed, and proves very clearly that they are not so far behind the times in matters photographic at Brighton. We note that a dark-room is provided for customers.

SMITH'S Co-operative and Cash Price List, 35, St. Thomas Street, Weymouth.

Weymouth swans are very well known birds to amateurs, and doubtless some of our readers will visit them this summer. At the above stores will be found a very good assortment of apparatus, plates, and papers, and a convenient dark-room.

FALLOWFIELD'S Photographic Remembrancer. 146, Charing Cross Road, W. May. Free.

As usual, we have two or three good novelties—the "Fallowfield" Hand-Camera, which we shall notice more fully in a coming issue; a new combined spirit level and finder, a hand-camera developing set, a quadrant spirit level. Fallowfield has still a few more job lines left, which are all worth attention.

MESSRS. E. AND T. UNDERWOOD'S new Catalogue for 1892.

This differs from most catalogues in the respect that it contains only Messrs. Underwood's own manufactures and productions. In a well got up book of fifty-four pages we count no less than fourteen complete sets of apparatus. There are well-made and finished guinea sets; double extension sets, with parallel bellows and with taper bellows; stereoscopic sets, rectilinear sets, and so on, to the latest patterns—the "Field" and the "Club." In these latest patterns the design and make are of a very high order, the compactness and simplicity of the arrangements being remarkable. Messrs. Underwood were the first to adopt a perforated baseboard for closing the camera without first removing the lens, and we observe that many of the cameras have this very convenient arrangement. After these come illustrations of cameras and double backs only, with their respective prices, following which are various useful shutters, noticeable among which is their well-known instantaneous and stereo-instantaneous. This is a time and instantaneous shutter of the roller-blind family, having an index and speed pointer, by which the speed can be set at once to whatever is required. This has also the further advantage that the actuating spring cannot be overwound, a not infrequent cause of damage where it is possible. Lenses—meniscus, plano, stereoscopic, rectilinear, and wide-angle—are all of the highest quality only, and a two-page description of the uses of, and the difference between, the various lenses will be found to be of real service to the amateur who is just commencing, and is uncertain as to what his real wants are. A good selection of sliding and folding tripods, and a capital variety of carrying cases, at very moderate prices, are the concluding features. We have had opportunities of examining many of the items in the catalogue, and from what we have seen of the workmanship and finish of the goods, we can readily understand that Messrs. Underwood's business shows a large and steady increase as each season comes round. Their well-known hand-cameras are set forth in a separate catalogue manual, which we will notice on a future occasion.

**Wolverhampton.**—The usual monthly meeting of the society was held on Friday, May 6th, in the society's rooms, Blind Institution, Victoria Street. The President, H. Holcroft, Esq., presiding over a very good attendance of members and friends, amongst them being H. Holcroft, Esq. (President), T. Ironmonger, C. W. Ironmonger, Mrs. Welford (Birmingham), Miss Evans, P. T. Haddingham, Miss Reynolds (Bradford), E. W. T. Jones, E. A. White, J. Stokes, W. German, F. J. Gibson, etc., etc. Mr. Edwards was elected and Mr. Merdock was proposed as a member of the society. Mr. Holcroft made certain announcements in regard to the Photographic Survey, and said he hoped by next meeting to be able to place before the members full and detailed particulars of the above. Mr. W. D. Welford then gave his paper on "Hand-Cameras, their Construction and Use." He explained that a hand-camera required more experience and practice than an ordinary stand camera. Lenses and shutters were described also, and the different makes of cameras on the market. The lecturer next drew attention to the position in which the camera should be held, and urged every user to thoroughly study the mechanism at home first. He concluded with advice as to street scenes, and a strong appeal to members to utilise all opportunities in that direction, and especially as the society had undertaken the survey of the town. He exhibited the following well-known cameras:—The Ideal, The Facile, Talmer, Cytox, Beck's, Crouch's, and Kodak. In addition to the cameras, some 150 lantern-slides were thrown on the sheet, and comprised street scenes, landscapes, animals, shipping and river scenery, architecture, etc., etc., amongst them being some very fine slides, showing what a hand-camera can do, and, from the frequent applause, showed how much they were appreciated.



## Elementary Photography.

BY JOHN A. HODGES.

### CHAPTER XV.

#### TRIMMING, MOUNTING, AND FINISHING THE PRINTS.

The Necessity for Care in Finishing Prints — A Stumbling-block with Amateurs—Trimming and the Use of the Knife —Improving the Composition by Cutting Down — How to Ascertain whether a Print Requires such Treatment by the Use of Masks—Cutting Knives and Cutting Blocks—Necessary Apparatus—Cutting Glasses—Procedure—Mountants—How to Make Starch Paste—How to Apply it to the Print—How to Mount the Print—Mounting Albumenised Paper Prints, Mounting Bromide Prints—Difference of Treatment—How to Improve the Surface of Bromide Prints—The Selection of the Mount—Simplicity of Treatment Recommended — Vulgarities to be Avoided—Mounts of Good Quality Recommended—Mounting Prints in Optical Contact.

By whatever process the prints may have been produced, they will not be in a fit state for preservation or presentation until they have been suitably trimmed and mounted. Now, although the mounting and finishing of a print would at first sight appear to be an extremely easy operation to perform, as a matter of fact it is one which proves a stumbling-block to a large proportion of amateurs. This is in some measure, no doubt, due to slovenliness or carelessness, though these are not the sole causes. The reader, therefore, from the first, must learn to pay some attention to this purely mechanical work, because very much of the effect of the print will be due to the manner in which it has been trimmed and mounted.

In the first place very much will depend upon the amount of subject included in the picture, which may often be improved in its composition by a judicious cutting down or trimming. In ascertaining whether this should be done or not, the employment of a number of cut-out mounts with openings of various sizes, which may be put over the print until the best result is obtained, will be of great assistance. Never be afraid of cutting the picture if thereby its composition can be improved; recollect that size has nothing to do with merit, and if it is apparent that a half-plate picture is improved by being reduced to half its dimensions, do not hesitate, but make the necessary reduction.

The size of the print being determined, we may proceed to trim and mount it. Various cutters are sold at the shops, but a good sharp penknife may be used, or an old razor, or, best of all, a knife such as is used by shoemakers for cutting leather. Whichever is used, it should be kept sharp by constantly rubbing on a hone, and not allowing to get blunt, or jagged edges will occur in the print. A drawing board makes a capital cutting-board, and an ebonite straight-edge or T square is better for a cutting edge than the glasses usually sold for the purpose, which are frequently not true. The print being placed in position on the cutting-board with the straight edge upon it, the print should be cut with one stroke of the knife, using just sufficient pressure to effect the purpose. A wooden cutting-board necessarily will not have a very long life, so more pressure than is required should not be used. A sheet of plate glass will be more durable, but it will blunt the cutting-knife sooner than the drawing-board.

Opinions are divided in regard to the choice of a mountant, but on the whole I do not think starch can be beaten for cleanliness and simplicity. It should, however, be properly made and free from lumps. Some kinds of starch are very unsuitable. Glenfield starch is much the best for mounting purposes. To make it, place two teaspoonfuls at the bottom of a gallipot, and make it into a perfectly smooth thick paste with *cold* water, then fill up the pot with *boiling*

water, stirring evenly but quickly all the time, continue the stirring for two or three minutes until the starch clears and thickens; it may then be allowed to cool, when it should solidify into a thick jelly. The trimmed print is then placed face downward upon a sheet of clean newspaper, and the starch applied to its back. It may be either brushed or spread by means of a roller squeegee; the latter is the better mode, as any small lumps in the starch are then broken up. Put a small portion of starch in the middle of the print, and pass the squeegee backwards and forwards over the print until its surface is evenly covered, in the same way as printing ink would be applied to a stone. Then lift the print carefully by opposite corners, taking care to avoid getting any starch on its face, which would cause smears, and lay it down evenly in position on the mount, upon which two small pencil dots should have been previously made as a guide to position. If it is not quite even, it may be easily shifted until it is so. No attempt to rub or press it into contact with the fingers should be made, but a piece of clean blotting paper slightly larger than the print should be laid over it, and a large size roller squeegee—not the one previously used for spreading the starch—should be applied with a moderate degree of pressure over the surface. The blotting-paper may then be removed and the mounted print allowed to dry spontaneously.

Albumenised paper prints are more easily mounted when slightly damp, therefore after trimming and about an hour before mounting they should be placed between a few layers of damp blotting paper. Bromide prints and prints upon gelatino-chloride paper must always be allowed to become thoroughly dry before they are mounted; if mounted damp, the surface would be spoilt. With some makes of bromide paper there is an objectionable metallic lustre and too much glaze; this can be easily got rid of, and the print much improved, by rubbing some finely powdered pumice gently over its surface after it has been mounted and allowed to become dry. Prints so treated, if properly developed in the manner I have already indicated, should be almost indistinguishable from platinotypes in colour and appearance.

It is necessary whilst upon this branch of the subject to say a few words upon the selection of the mount, for the effect of the photograph will depend largely upon its suitability to the subject. The reader should visit a photographic exhibition and note the manner and style in which the various exhibitors mount and frame their pictures; he will notice that, as a general rule, the pictures which have received distinction at the hands of the judges show careful treatment and the exercise of a considerable degree of taste in this direction. The fact is that careful mounting and framing considerably enhances the attractiveness of a photograph, and at the same time increases the chance of its attracting the attention of the judges.

It will generally be found in choosing mounts, that the simpler they are in character and design the better the effect. When the pictures are to be framed I very much doubt whether anything better than a plain cut out mount, either pure white in colour or of a tint in harmony with the colour of the print, can be chosen. Vulgarities, of all things, should be avoided. Never be persuaded to buy cheap mounts; by that I mean, do not purchase mounts of common quality made up to imitate the more expensive kinds. Let the material be of the best. Avoid mounts with ornamental borders—such decoration in a mount is altogether superfluous and tends to distract the attention from the picture. Oxford line mounts are also, to my mind, very inartistic, and give even good work a commonplace appearance. Upon the whole, the plate-sunk mount with India tint appears to be the most suitable and effective commercial mount at



present made, and the reader will with most subjects be pretty safe in using these. When silver prints are to be mounted in quantity and with a view to their being preserved for a long time, it becomes important to have some regard to the purity of the mount itself, therefore only a respectable firm should be dealt with and a good price paid.

It is sometimes required to mount a print in optical contact with a piece of glass, and as the process is an easy one, and enables the most brilliant result attainable to be produced, I give the method here. Take the glass upon which the print is to be mounted, and which should be of good quality and free from flaws, and thoroughly clean it by rubbing over it a mixture composed of tripoli  $\frac{1}{2}$  oz., liquid ammonia  $\frac{1}{2}$  oz., methylated spirit  $\frac{1}{2}$  oz., and water 3 oz. Now make a weak solution of gelatine by dissolving 60 gr. in 2 oz. of hot water. Having dusted and warmed the glass, pour a pool of the solution in the centre. The print, which should have been soaking in water for some time previously (in cold water if a gelatino-chloride or bromide print, in warm if an albumenised paper one), should then be placed face down on the centre of the glass, and a roller or flat squeegee passed vigorously backwards and forwards over its back until all the surplus gelatine is expelled. If any small glis'ening specks appear on the face of the print they will be due to minute air bubbles, and the squeegee should be used again until they disappear. The glass with the mounted print should then be rested in a vertical position until the print is dry. This is the mode in which the oval frames one sees exposed for sale in the shops at the sea side and other places of public resort are produced. The result is not very artistic, but some of my readers will probably like to know how to produce such prints. The frames are an article of commerce, and can be obtained from any dealer in photographic requisites.

(To be continued.)

## An Introduction to Silver Printing.

By D. E. GODDARD.

(Continued from p. 363.)

WE have traced the processes of printing on albumenised and Aristotype papers, very rapidly, it is true, still we think we have shown the student how to start work. We must now follow the prints from the light-tight box to the mounting board or the album. Permit a suggestion; there is one very valuable book to keep—one for failures only. It is by the lessons taught by our own errors, or by those of others, that we arrive at excellence both of character or work. To judge by the question columns of our journals, many experience great difficulties in the next process—

**Toning.**—We think that if the following method of working be closely adhered to there will be fewer failures to try the temper, and the percentage of spoils will be reduced to a minimum.

The trimmed prints are placed face downwards, one by one, in a large vessel of clean water, pressed gently under the surface, and the whole covered with a black cloth. The fluid immediately becomes milky, and is poured off in fifteen minutes. This is repeated until the water comes off quite clear. In the final washing a small quantity of sodium bicarbonate is added after it has been dissolved in a separate vessel, the quantity varying according to the amount of water used in the washing and the number of prints. This is for the purpose of neutralising any free acid in the paper.

For washing we find that the American pulp pails answer admirably. Each has its own miniature mop for cleaning and dusting, and are, like the pails, marked "water only" and "hypo only," respectively. It is well to avoid shaking or violently agitating prints in any stage of washing, as they may double up, bruise, or tear.

There are many toning formulæ. We have tried several, but

for years have stuck to one only—the borax bath recommended by Werge. It is as follows:—

|                                                  |    |    |    |    |          |
|--------------------------------------------------|----|----|----|----|----------|
| (1) Borax                                        | .. | .. | .. | .. | 1 oz.    |
| Dissolved in water at 212° Fah., then made up to | .. | .. | .. | .. | 80 "     |
| (2) Gold chloride                                | .. | .. | .. | .. | 15 gr.   |
| Distilled water                                  | .. | .. | .. | .. | 15 drms. |

To use, we take—

Borax solution .. .. . 8 oz.

and add—

Gold solution .. .. . 1 drms.

This bath we use for all three descriptions of paper we have referred to. It can be used as soon as it is made. Before proceeding to tone, a very important test must be applied. A piece of red litmus paper will tell us whether the bath is acid or alkaline. If acid, it must be rendered distinctly alkaline; we generally use sodium bicarbonate.

We have found that on this one point the efficiency of the bath depends. This is the one great mystery of toning—*keep it alkaline*. The best results are produced by a freshly-mixed bath. We have, however, a 40 oz. bottle of old borax bath that we have occasionally used for more than two years, the only addition made being gold chloride to replace what has been used up. This old bath still works well.

It is safest to use one dish for toning only.

The prints are taken out one by one, and placed face downward in the bath, and gently rocked. This is easily done by using a drawing board, resting on a semi-circular strip of wood, a cedar pencil, or a glass rod. After five minutes the bottom print may be turned face upwards. Should a change be noticed from brick red to a more agreeable tone, the whole batch may in turn be treated like the first. Care must be taken that the prints do not stick together, or to the sides of the dish.

The tint rapidly deepens when once started. When a warm, rich brown is reached, the print may be held up to the light; should any of the original brick-red be noticed, it must be returned to the bath. If purple or black tones are wanted, the toning must be pressed for a longer period till they are obtained. It must never be forgotten that the succeeding fixing bath will cause a loss of tone; not so much with this formula as with some others.

Before leaving the toning process it will be well to bring before you a formula specially recommended for Ilford Aristotype prints and others. It is as follows:—

|                        |    |    |    |        |
|------------------------|----|----|----|--------|
| Ammonium sulphocyanide | .. | .. | .. | 30 gr. |
| Water                  | .. | .. | .. | 20 oz. |
| Gold chloride          | .. | .. | .. | 2 gr.  |

We have found this work well, but it is so much more rapid in its action, that great care will have to be exercised to prevent over-toning.

If the prints refuse to tone or tone very slowly, we may suspect that the bath has an acid reaction; if not, we must look for a trace of hypo having been accidentally introduced, or possibly weak in gold. Prints will always tone quicker in warm weather; if our operations are carried on in a cold room in winter, it is advisable to work with the bath at not less than 60 deg. Fahr. When the desired tone is obtained, each print is then removed to a bath of clean water in which a small quantity of common salt (sodic chloride) has been dissolved, say from half to 1 oz., according to the volume of water used. This stops the toning process, and since we have adopted this plan, we seldom get any prints blistered. They are then placed in like manner in a vessel of clean water, always remembering that in this and all other operations, one by one, not in bulk, and all placed face downwards. In like manner they are removed to the fixing bath, the formula of which is:

|                     |    |    |    |         |
|---------------------|----|----|----|---------|
| Sodium hyposulphite | .. | .. | .. | 16 oz.  |
| Water               | .. | .. | .. | 80 "    |
| Ammonia, '880       | .. | .. | .. | 2 drms. |

In this they are kept gently rocking for at least 15 to 20 minutes and not permitted to stick to each other or to the sides of the dish. From this bath they are removed to a pail of clean water.

All traces of hypo have now to be removed from the prints, otherwise their permanence will suffer. We believe that water is the best hypo eliminator. We would just refer to two modifications of the hypo bath. In the one case, by the addition of



acetate of lead, beautiful grey and black tones can be produced, provided the toning be stopped when warm tones are reached.

In the other modification, an acid fixing bath is advocated. We have only seen notices of this in the periodicals, but can give no report from experimental work.

There are many contrivances for washing prints. We always use a Godstone's washing trough, the largest stock size, and generally wash for at least six hours.

In order to ascertain if all the hypo has disappeared, we treat a sample of the water with a few drops of the following test:—

|                                |        |
|--------------------------------|--------|
| Potassium permanganate .. .. . | 1 gr.  |
| Potassium carbonate .. .. .    | 10 "   |
| Water (distilled) .. .. .      | 20 oz. |

If the colour is discharged, or assumes a pale straw-colour, it denotes the presence of hypo. If the pink colour remains, we may reasonably conclude that the process is complete. We generally stand the glass in which the water is tested, either on a piece of white writing paper or in a porcelain dish, and if there is the slightest doubt, continue the washing. The washing prints have now to be dried. They are lifted one by one, and placed between clean white blotting paper, or better still, between the leaves of Wheeler's blotting books. While so doing, it is a good opportunity for inspecting the prints. We shall probably find some failures.

1. If any have a yellow or brick-red tone, it shows that toning is incomplete, or very slight.

2. If any have a poor, bluish tint, they have been overtoned.

3. If the whites are of a yellowish colour, the toning, fixing, or washing has been imperfect.

4. Blisters may appear in some prints—we never attempt to cure them—we destroy the print at once as a rule, but, as we stated just now, we hardly ever meet with them since adopting the sodic chloride bath after toning.

5. Mealiness in print, or a peculiar spotted appearance, is generally due to the faulty preparation of the sensitising bath; probably it was too weak.

6. Measles in prints is thus described by Mr. Wall on p. 166 of his Dictionary, "A peculiar effect in prints which shows, when they are held up to the light, opaque blotches, which are due to imperfect fixation." On keeping, these spots turn yellow, due to the formation of sulphide of silver.

Aristotypes cannot be dried by the methods just described. They must be placed face upwards on blotting paper, or they may be squeegeed down on perfectly clean plate glass, or on clean ferrotype plates, or on ground-glass according to the surface required, glazed or matt. They should be left to come off of their own accord.

Should a matt surface be required, more care is requisite. A sheet of the finest ground-glass must be well washed, and when perfectly dry dusted over with powdered French chalk, rubbed in with a large round camel-hair brush, as carefully as if we were blackleading a wax mould for electrotyping. Then with an old silk handkerchief remove all superfluous chalk, lay the print on the glass, put a few sheets of clean blotting paper over it, and pass the squeegee or the indiarubber roller several times across it, always in the same direction. If the weather is cold it will be advisable to warm the indiarubber roller, otherwise minute glazed points may be sprinkled over the matt print. We also strongly recommend a roller with a thick covering of rubber. A lithographic roller has proved in our hands a valuable tool, though perhaps unnecessarily heavy.

The success of this operation depends entirely on the absolute freedom from dirt or impurity of any kind on the glass or ferrotype. Should any exist, the prints will refuse to leave the plates, excepting in pieces. The time taken in drying will vary. The first sign of being nearly ready will be that one or more corners will show a disposition to leave the glass. When that occurs the prints may often be stripped off, but there is danger in so doing, so we prefer to wait until they drop off without any help. We would here draw attention to the necessity for the exercise of judgment as to what Aristotypes to glaze or matt. For instance, we once took several church interiors. Matt-surface rendered the dark portions very opaque and heavy, but squeegeed on ferrotype the glaze gave a depth and brilliancy that was most satisfactory. We now come to the final process of—

**Mounting.**—If the prints are allowed to remain in the drying book for a few hours, they will be in fine condition for mounting, and here comes in the advantage of their having been previously trimmed. If they are bone dry, they must be soaked in clear

water till they are quite limp, then laid one over another, crosswise, on a pad of blotting paper and left while we get our mountant into working order. The only one we ever use is made as follows:—

Take 1 oz. of best Russian glue or 1 oz. of Nelson's gelatine (we prefer Russian glue), cover with water, and leave for twelve hours, then dissolve it in a water bath. When quite fluid, add gradually (say a drachm at a time) 2½ oz. of methylated spirit, stirring well until each flocculent precipitate has disappeared; filter while hot through muslin that has been well washed, and keep for use in a small preserved ginger jar, the cover of which fits the outside of the neck. When cold, this medium has the appearance of a stiff jelly, excepting during the hot summer months, when it is often semi-fluid. It keeps good a very long time; in fact, we have never found it to fail in any respect. We place our jar of medium in a water bath and render it fluid. We lay each print face downward on a sheet of clean paper. We find old Bradshaws or obsolete civil service price books answer admirably. It will not do to use recently printed newspaper, as we once covered a print with a portion of a leading article. With a large hog-hair brush (called by artists a sky brush) moderately charged with medium, we paint rapidly over the back of the print. It is then lifted up and placed in the position it has to occupy on the mount or in the album, a layer of clean blotting paper is laid on the top, then with the hand carefully work out any air bubbles, beginning in the centre and working to the edges. We must use a fresh piece of paper for each print. If the brush works in the least sticky, or stiffly, we dip it into the hot water surrounding the jar of medium, which it is *not* necessary to keep at 212 deg. Fah. Let the water be hot enough to keep the medium fluid. Prints 10 by 8 and larger require great care in handling, not only lest they should tear, but because they have a disagreeable tendency to roll up directly they are lifted. This can be checked by bringing the edges of the shortest sides *nearly* together immediately the print is turned over, then place it in its position, letting the centre touch the mount first, and proceed as described a few moments since.

Aristotypes cannot be mounted in this way; their surfaces must not be wetted. We generally use a touch of medium at each corner, or run round the edge and let them dry under pressure. Sometimes it happens that flock from the blotting paper will cover some portions of an albumenised print. This is easily removed with a small hog-hair brush and a little water when the print is dry. We have endeavoured to trace rather minutely the manipulations of silver printing. We fear we have wearied you, but as this paper is intended only for beginners, we could not omit or lightly pass over any detail of the various processes.

In conclusion, the student will do well to remember that there is no royal road to success. Every detail must be carried out with the utmost care, as if success depended on each alone. He will never attain steady ever-increasing improvement if he says, "Oh, that is near enough!" or "That little bit of dirt in the dish won't matter!" or slur over a number of acts of carelessness with "It will all come right in the end!"

He must remember in photography, as well as in the everyday business of life, that whatever is worth doing at all is worth doing well, and nothing can be done well without persistent attention to the smallest items in the details of manipulation.

The pupil or student who is never satisfied with his own work *must* succeed if he patiently perseveres.



**A Photographic Exhibition** is at present being held in the Polytechnic, Regent Street, which contains perhaps the finest collection of photographs ever exhibited. It comprises the most picturesque scenes on the Pennsylvania Railroad, the route by which the Polytechnic excursionists to the World's Fair will travel next year. The general public will be admitted to this exhibition free on presentation of visiting card, or the inscription of name and address in the visitors' book.

**Barrow.**—The first photographic outing of the season was held on 30th ult., by coach to Rampside and Piel Castle. A party of eleven left Barrow at 2.15, and a halt has made at Rampside Church; several plates were exposed on the church and other subjects. After which the journey to Roa Island was resumed, and on arrival a boat was taken over to the Castle and a goodly number of plates were exposed on the Island. The return journey was commenced about 7.15 p.m., and a very pleasant afternoon was spent, the weather being very suitable for camera work.



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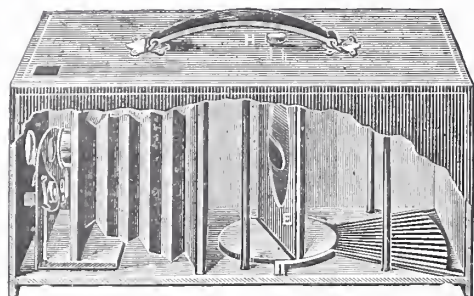
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## ILLUSTRATED SUPPLEMENT,

MAY 13, 1892.

## Monthly Competition, No. 35, "Inland Scenery, with or without Figures."

ADAMS, A. (Ambleside).—"Is yon my Old Man a-Coming?" Ross ordinary angle doublet,  $f/35$ ; 10 sec., April, rather dull light, 1.30 p.m.; Thomas's T. C. L. "The roadway being very dry, comes out too dense, and has been rubbed down on the negative." A very good print; well to the front.

ADAMS, W. (South Africa).—"A Pleasant Pathway." Optimus Euryscope,  $f/32$ ; 12 sec., November, sunlight; Carbutt's orthochromatic film; Ilford P. O. P.; the negative was developed with eikonogen. Considerably over-printed, too much foreground.

ALAWELL, E. (London).—"Inland Scenery." Underwood rapid view,  $f/22$ ;  $\frac{1}{2}$  sec., April, sunlight, 2 p.m.; Ilford ordinary. "Developed with pyro ammonia, acid fixing bath." A most fearfully hard print.

ALLENDER, A. (Liverpool).—"Dibblingsdale, nr. Bromborough." Lancaster's Instanto,  $f/30$ ; 7 sec., March, very dull, 3 p.m.; Ilford ordinary. "Owing to very bad light, could not get better definition, but hope you will not be too hard on me, as I have only been photographing about three months, and this is my first exhibit." A little more foreground might have been included, and it looks as though the lens suffered from flare; by no means a bad result, taken as a whole.

ANNESLEY, MISS E. (France).—"Old Houses." Euryscope, cap off and on, April, sunshine, 3.30 p.m.; Ilford rapid; Eastman's bromide paper, iron developer. A good subject, but over-developed.

ARCHER, C. F. (Clapham).—"A Boathouse." Hoekins' R.R. half-plate landscape,  $f/32$ ; 30 sec., April, good diffused light, 4 p.m.; Paget; platinum, Jacoby printing-out. Too much water in the front, and the reflections in it are so perfect as to beat many prints sent in, so far as definition and clearness.

ANDERSON, W. (Edinburgh).—"The Face of Wood and Tweed." Rapid Rectigraph (Lancaster),  $f/22$ ; 30 sec., with Ilford Isochromatic and screen, April, sunlight, behind white cirrus clouds, 5 p.m.; developed by pyro soda. Suffers fearfully from halation, and water too white, and right-hand corner weak.

ARTISS H. (Birmingham).—"Rustic Bridge." Lancaster's single instantaneous,  $f/15$ ; 10 sec., Oct. 10th, 1891, very poor light, 3.30 p.m.; Ilford ordinary; silver, chloride of gold 1 gr., acetate of soda 30 gr., water 5 oz. "My first competition and my first time of using the half-plate camera." Much over-exposed, too much foreground, figure useless.

ASH, MISS M. (Mentone).—"Shrine in Olive Grove." R.R.,  $f/25$ ; cap and uncapped, April, bright sunshine, 10 a.m.; Lumiere, intensified with mercury and ammonia. Printed far too deep.

ASHLEY, G. R. (Bettws-y-Coed).—"St. Crwst." Dallmeyer's R. R.  $1\frac{1}{2}$  sec., August, good light, 2 p.m.; Paget xxxxx; Pizzighelli printing-out paper. Evidently stale paper has been used, or else it is much over-printed; the result is fearful.

ASHTON, A. (India).—"A View in Mussoorie." Ross 10 by 8 R. S.,  $f/45$ ; 3 sec., October, bright light, but distance hazy, 8.30 a.m.; Wratten and Wainwright's rapid. A very fine print; a little too black in the right-hand foreground.

ASTON, A. H. (Birmingham).—"Aston Church and Bridge." Lancaster's Instant; 1 sec., August, good light, 11.30 a.m.; Ilford; Fry's ivory films. A fearful and disgraceful exhibition.

BAILEY, F. (Canterbury).—"A Country Cottage." Underwood's single landscape,  $f/22$ ;  $\frac{3}{4}$  sec., March, sunlight, 2 p.m.; Ilford ordinary. A most fearfully inartistic cottage, just as a child draws a house, with a chimney at each end, etc.; over-printed.

BAIRD, V. C. (Broughty Ferry).—"Castle Road." Dallmeyer's R. R., 12 by 10,  $f/22$ ; 5 sec., August, very dull light, 7 a.m.; Barnet; Ilford printing-out paper. Technically, a magnificent print, and highly commended—a little too much foreground.

BALLARD, C. (Putney).—"On the Ouse, Bedford." Single landscape 7 in.,  $f/20$ ; 4 sec., August, good light, 11 a.m.; Ilford ordinary; platinum. Good careful work, but too unrefined.

BANKS, J. F. (Norwich).—"Great Yarmouth." Beck's R. R., half-plate,  $f/22$ ; slow drop shutter, June, subdued light, sun breaking through clouds, evening, 5.40 p.m.; Ilford ordinary. "This is a

view of Great Yarmouth taken from the foot of South Town Bridge from the Norfolk side. I had to stay a long time to get an exposure, and nearly lost the light." Over-printed and too much foreground, and can hardly be said to be a view of Yarmouth.

BARNWELL, C. (Staffordshire).—"The Village of Ellastone," in the county of Adam Bede. R. R. (Laverne),  $f/22$ ; half sec., April, sunshine, 2.40 p.m.; Ilford ordinary; Ilford P. O. P. Over-printed, and thus spoilt; too straight in composition too.

BARON, R. R. N. (Bury St. Edmunds).—"Lodge at Hardwick." Lancaster's Instantograph,  $f/20$ ; 4 sec., December 1891, sun shining, about 2.30 p.m.; Ilford ordinary. An awful example of inartistic selection, focussing, and printing.

BARROW, J. G. (Ruthin).—"A Welsh Homestead." Lancaster's Inst.,  $f/20$ ; about 1 sec., March, bright sunshine, 2.30 p.m.; Ilford ordinary. Over-printed, and the wall is hideous.

BEARDS, L. (Clevedon).—"After a slight Snow-storm." Chipper's R. R.,  $f/32$ ; 1 sec., February, fairly bright light, sun at intervals, cloudy and overcast, 12.40; Ilford ordinary half-plate. "I have



No. 1.]

"A STAFFORDSHIRE LANE."

[W. Northwood.

[SILVER MEDAL]



only taken about a dozen landscapes in my life, as I prefer portraiture." A very fair result spoilt by over-printing; allidea of sunshine is lost.

BAYLEY, W. (Isle of Man).—"Little Mill Stream." Ross R.S., *f*/16; 3 sec., February, moderate light, 12 a.m.; Ilford's. "I may say that the light varied very much, being at the time very clouded." A little too much foreground, and over-toned.

BENSON, F. (York).—"Bolton Abbey." Optimus R.R., *f*/32; 1 sec., June, sunshine, 4.30 p.m.; Ilford; Ilford slow bromide, developed with ferrous oxalate. An utterly uninteresting print of a magnificent place.

BENTLEY, H. C. (Louth).—"The Rippling Stream." R.R., *f*/32; 3 sec., Easter Monday, good light, 1 p.m.; Castle; Smith's Simplex paper. Too much foreground, and the left bank too dark.

BIBBY, W. (Blackburn).—"Evening." R.R. lens; 4 sec.; developer, hydroquinone; Ilford plate; 6 p.m., no clouds. "The right hand bottom corner was in deep shadow, being low ground." Although it shows careful work the result is not pleasing.

BISCOE, J. (Jersey).—"The Corbiere Lighthouse." November, bright sunshine, 3 p.m.; Ilford. "When this photograph was taken I was only a four months worker, but of course have improved the print now. I am still in the early age of photography, and hope you will excuse it if very bad." Can Corbiere Lighthouse be inland scenery? Printed far too deep, and spoilt by vignetting.

BLACK, J. E. (Peebles).—"Mid-path Castle." R.R., *f*/15; 3 sec., April, sunshine, 3.30 p.m.; Ilford's extra rapid. Taken with Shew's "Eclipse" hand-camera. Negative developed with pyro and ammonia. A fearful case of over-printing.

BLYTH, R. H. (Durham).—"A Scotch Mountain Stream." Ross rapid symmetrical, No. 5; 15 sec., August, afternoon sun, 4.30 p.m.; Wratten ordinary; silver print, borax and acetate of soda. Utterly spoilt by the over-printing.

BOATMAN, A. (Essex).—"Watching the Mill Stream." Optimus R.R., *f*/24; half sec., June, bright sunshine, 1.30; Ilford extra rapid. "My first attempt at competition; no retouching to negative or print; kindly oblige a beginner with criticism." Overprinted; water too white, too much foreground, and bridge cuts it in two.

BOLDERSTON, A. E. (Cheshire).—"Where Flows the Murmuring Brook." French R.R., *f*/32; 5 sec., July, cloudy, 12.30; Ilford ordinary. "My first competition. Negative and print untouched." Over-printed, and wants clouds badly.

BOOTH, J. (Reading).—"Bablock, Hythe Ferry." R.R. half plate, *f*/32; 3 sec., noon, bright sunshine; Ilford. "Taken end of last August, during a camping-out trip. The weather was thoroughly bad, both for boating and photography." Would have been better if boat had been midstream; the straight lines in it are harassing.

BRADBURN, S. (Manchester).—"Cottages near Bettws-y-Coed." R.R., *f*/32; 6 sec., August, moderate sunlight, 1.30 p.m.; Ilford ordinary. "Rather difficult to give the proper exposure, owing to the constant stream of coaches and pedestrians." Too hard and chalky.

BRADLEY, R. (Ashton).—"Springtime." Shew's half-plate, open aperture; inst., June, diffused light, 5 p.m., Castle. "This picture was taken during a short holiday in Nottingham. I waited nearly the whole afternoon for the cattle to group themselves as taken."

BRANTHWAITE, R. (Richmond).—"Burnham Beeches." Ross 10 $\frac{1}{2}$  in., R.S., *f*/32; 4 sec., April, bright sunlight, 2.15; Thomas T.C.E.R.; platinotype, hot bath. A very good print.

BRIGHT, S. (Genoa).—"The Lake, Picenardi Castle." Lancaster's Instan., *f*/20; 2 sec., Sept., bright sunshine, 2 p.m.; Ilford ordinary,

backed. "Not a cloud was to be seen, and would have rather waited for a more diffused light, but this was my only chance." Wants half an inch off foreground, and is a little too flat.

BROCKLEBANK, B. (Eaton).—"Postern Gates, near Lancaster." Noakes' quarter plate; 1 $\frac{1}{2}$  sec., September, sunshine, 12.30; Ilford ordinary; Ilford slow bromide. A fearful case of black and white, no sunshine.

BROWN, F. (Barry Dock).—"The Abbey Gate." Lancaster's R.R., *f*/32; 2 sec., May, very good light, 2 p.m.; Marlon's ordinary; Eastman's bromide, oxalate of potash and iron. "This was my first half-plate." Print under-exposed, and too much iron in developer.

BRYANT, F. B. (London).—"Ranikhet Fuel Yard." Ross's R.S.; 2 sec., December, bright light, 10 a.m.; Ilford rapid; bromide, Eastman's. A good print of a very curious spot.

BRYANT, G. E. (Manchester).—"Rhos Farm." Laverne, *f*/22; 5 sec., September, diffused light, 3.30 p.m.; Ilford ordinary. Over-printed, and foreground wants breaking up a little.

BURGESS, J. P. (York).—"Old Mill, Ambleside." Laverne, *f*/22; 4 sec., August, diffused light, just before heavy rain, 1 p.m.; Ilford ordinary. "Obliged to be taken from the bridge over the stream, no choice of position; my second summer's experience; never exhibited before." Would be improved by half inch less foreground; is over-toned, and the attempt at a matt surface is not a success.

CARLYLE, G. (Newcastle-on-Tyne).—"A Quiet Nook." Underwood's Instanto. lens, *f*/22; 5 sec., March, dull, 3 p.m.; Thomas. "My first competition after six months' work." Over-printed and over-toned; fearfully flat.

CARR, F. (Willows-Walker).—"Annatt's Wall." *f*/16;  $\frac{1}{2}$  sec., October, sunlight, 12.30; Paget; platinum toning, Blanchard paper. "The weather was windy but very clear, clear sky and no clouds." Not an artistic treatment of a good subject.

CARRUTHERS, G. (Birkenhead).—"Hoar Frost." R.R. half-plate, *f*/32; 4 sec., December, sun through fog, 2 p.m.; Phoenix. A good study.

CHURCHILL, C. (Greenwich).—"Old Drinking Fountain." March; *f*/22; 3 sec., 4 p.m.; Ilford P.O. paper. Over-toned and not artistic.

CREMER, C. (Faversham).—"Inland Scenery." Wray's 5 by 4, *f*/22; 2 sec., July, fair light, 4.30 p.m.; Ilford ordinary. Wants 1 $\frac{1}{2}$  in. off right, 1 in. off left, and  $\frac{1}{2}$  in. off foreground.

CHAPMAN, E. (Manchester).—"Fire!" R.R., full aperture; Thornton-Pickard shutter; May, bright sunshine, 3 p.m.; Ilford

rapid. "The wind was blowing hard on to the gun, which has caused the muzzle to be hidden by the smoke." Fearfully over-printed, and not artistic.

CHAMPNESS, A. J. (London).—"Old Manor House." Dallmeyer's rapid rectilinear, *f*/32; 8 sec., April, bright light, 2 p.m.; Ilford ordinary. The manor house is the least important thing in the print, and camera was not straight.

CLARK, C. (Edinburgh).—"The Old Footbridge." Single landscape (Dallmeyer), *f*/48; 2 sec., May, strong sunshine, noon; Ilford ordinary; plate developed with pyro, soda, and potass. Completely ruined by the figure on the bridge.

CLARKE, W. (Loughborough).—"Miller's Dale." Swift rectilinear, *f*/22; 4 sec., August, fair light, 11 a.m.; Edwards's special inst. Over-printed; an ugly and uneven tone, and ugly pink paper.

CONNAL, E. (Glasgow).—"Old Mill." Single, *f*/32; 10 sec., Aug., diffused, sunlight breaking through foliage, noon; Paget xxx.; pyro-ammonia developer. "First season's work." Too much in the picture. The wheel alone would have made a good picture.

COOKE, A. (Tottenham).—"Roll, Bowl, or Pitch." Euryscope, *f*/8; inst., April, fair, 11.30; Edwards's Isochromatic (inst.); platinotype.



No. 2.]

'GOING HOME.'

[G. Woods,

BRONZE MEDAL.



"This picture was taken with Underwood's hand-camera, the Sphynx, and was the second time I have been out with it, and I only started five months ago." The subject certainly did not warrant the use of plate, paper, and mount.

COOPER, A. (Cheshire).—"Bramhall Park." Lancaster's Instantograph, *f/22*; 6 sec., March 19th, 1892, sun shining brightly, 11.45; Ilford ordinary; Ilford P.O.P. It was a very clear day, no clouds about at all. Flat and over-printed, no sunshine.

CROWTHER, W. (Pudsey).—"Footpath leading up to Abraham's Heights." R.R., *f/37*; 2 sec., April, very dull light, 4.30 p.m.; Castle. "Taken with a quarter-plate lens, and was snowing very fast when the exposure was made." Negative slightly under-exposed and wrongly developed.

CROZIER, J. W. (Hexham).—"Wayside Cottages." Optimus, *f/32*; 15 sec., January, bright light, 10 a.m.; Ilford ordinary; Ilford P.O.P. Over-printed, too much foreground, and a figure, which has moved, carrying a camera stick in the foreground; result very bad.

CURREY, F. (Lismore).—"Near Cortina, S. Tyrol." Dallmeyer, *f/44*; about one-third of a second, August, bright sun, 11 a.m.; Eastman film; platinotype. "My light was so strong and bright, the exposure could not be taken by a watch, but was between one-third and half." Wants clouds, and the belt of pines softening down.

DART, W. B. (Tor-rington).—"Milking Time." Laverne's 9 inst.; February, fair light, afternoon; Iso; Ilford. Flat and unequal toning. This has, we think, been cut down, according to our suggestions, from a quarter-plate.

DAVIES, MISS C. V. (Mumbles).—"A Snowy Morning." Ross' R.S.; Ilford ordinary; light diffused, February, 9 a.m., 1 sec. "The sun had just disappeared behind a cloud when I photographed the scene; the negative has not been worked up at all." A very fine study and highly commended, and we should have reproduced it, only the beauty would have been lost.

DE LA MOTTE, E. (Surrey).—"Fernland." Lancaster meniscus, 3-8ths in.; 3 sec., September, sunny morning, 11 a.m.; Ilford. The print is rather

over-toned, and would have been improved by a figure or two.

DE MORGAN, S. (Isle of Wight).—"Godshill, Isle of Wight." Lancaster's instanto, *f/32*; 2 sec., July, bright sunlight, 2.30 p.m.; Fry's K.S. It would hardly have cost much to cut the part of the vehicle out, and it would have improved.

DIXON, J. (London).—"Lake in Southwark Park." 7 in. Wray's W.A.R., *f/16*; 1 sec., 31st March, 1892, bright light, 2.30 to 3 p.m.; Ilford red label,  $7\frac{1}{2}$  by 5, two years old; Ilford P.O.P., gold and tungstate; first picture! competition; developer, pyro and ammonia. An inch too much foreground, print flat, wanting in sunstine, negative wants intensifying.

DOUGLAS, MISS S. E. (Perth).—"Pony and Trap." Lancaster's Instanto.; 1 sec., March, bright light, 11.30; Ilford ordinary. Over-printed and over-toned, flat and poor.

DOUGLAS, T. (Gateshead).—"View on the Team." Wray's quarter-plate R. R., *f/22*; 1 sec., May, weak sunlight, about 1 p.m.; Castle quarter-plate; Dr. Jacoby's chloride of silver emulsion/paper. Printed too deep and fearfully over-toned.

DUGDALE, R. (Leominster).—"At Eardisland." Fallowfield's rapid doublet, *f/42*; 3 sec., April, good light, 4.45 p.m.; Eastman's film; P.O.P. Ilford. Far too deeply printed.

EDWARDS, F. E. (Bedford).—"Well Head, near Hitchin." Lancaster's Instantograph, *f/12*; 2 sec., April, sunlight, middle of day; Marion's ordinary; Eastman's bromide. "This is my first competition; have only taken up photography about two months." Spoilt by a hideous figure; too snowy and white from under-exposure.

EDWARDS, J. J. S. (Bishops Auckland).—"An English Easter." Zeiss Anastigmat, series 3, No. 5, *f/36*; 4 sec., April, no sun, rather dull leaden clouds, 3.15 p.m.; Ilford ordinary. "Taken under difficulties, the day being very wild, cold, and stormy." Printed too deep.

ENSOR, E. (Darlington).—"A Woodland Stream in Teesdale." R.R., *f/30*; 60 sec., June, very dull light, 6.15 p.m.; Ilford ordinary. "Reasons for long exposure: stream flows between lofty banks, with many trees and bushes cutting off much of the direct light. The evening was dark for time of year." A little too much foreground and over-toned.

EVANS, J. W. (Wolverhampton).—"On the Trent." Instanto., *f/32*; about 4 sec., sunlight, 12.30; Ilford ordinary. Far too much foreground, and wanting in interest.

FAWCETT, MISS C. (Durham).—"Varenna, Lake Como." April, noon, very sunny, Watson's R.R., *f/32*; Fry's celluloid film; cap off and on. The leaves on left want painting-out, and the right-hand side is a little too dark.

FENWICK, W. (Stanhope).—"The New Walk." Optimus R.R., *f/24*; 3 sec., March, strong light, 2.15 p.m.; Thomas' E.R. Far too much foreground, printed too deep, and on pink paper, which makes it worse.

FERGUSON, A. (Islay).—"Bridgend Lake." Taylor, Taylor, and Hobson, *f/22*; 2 sec., March, dull light, 1 p.m. Paget xxx. Far too much foreground, and not of sufficient interest.

FIRTH, G. (Wakefield).—"Saturday Afternoon." Wray's R. R., *f/16*; 2 sec., March, bright light, 3 p.m.; Ilford ordinary; bromide. "This was taken on a Saturday afternoon, at the end of the week's work. This print has, we think, been sent in error; it belongs to River Scenery Competition.

FOGWILL, A. (Portsmouth).—"South Harting, Hants." R. R., *f/32*; 2 sec., April, dull light, 2 p.m.; Ilford rapid. Far too deeply printed.

FORMAN, H. (Louth).—"Douglas Harbour." Lancaster's single, *f/16*; inst., May 18th, good light, 7 a.m.; Castle; Smith's Simplex. "Had camera three months. This is my first year in photography." Not



No. 3.]

"SURREY COTTAGES."

CERTIFICATE.

[W. Hayles.

inland scenery.

FORMAN, E. (Louth).—"Lake Burwell Park." Lancaster's single landscape, *f/16*; 4 sec., July, very poor and dull light, 3 p.m.; Castle; Simplex paper. We have seen several views of this place, and all from the same spot; it must, we think, be a result of a club outing. Printed too deep.

FOSTER, P. (Halifax).—"The Hour of Prayer." Ross' R.S. 9 by 7, *f/20*; 2 sec., March, good light, afternoon; Carbutt's film. "Tomb, Mosque of Sultan Ashraf, outside Cairo." Just wanting in brilliancy, but a very good subject.

FOWLER, J. P. (Dulwich).—"In a Devonshire Lane." *f/32*; 30 sec., May, 1891, light poor, evening; Thomas's T.C.L. "Negative somewhat under-exposed." This would pay for working up, and for the introduction of clouds.

FREEMAN, H. (Tring).—"Snow Scene." Lancaster's rectigraph, *f/20*; 1 sec., February, bright sunshine, afternoon; Ilford ordinary, bromide paper. A fearful black and white print.

FULLJAMES, H. (Wimbledon).—"The Path through the Wood." Stereoscopic Co.'s half-plate R.R., *f/32*; 5 sec., July, bright sun, under trees, 1 p.m.; Edwards' XL instantaneous; Ilford P.O.P. "Taken during my first six months' experience of photography, in a spot which would give twenty such pictures by simply altering the direction of the lens. Negative and print absolutely untouched." Would have been improved by throwing out of focus the distance, and being taken the other way of the plate.

GAPE, C. (Scole).—"The Village Street." Swift's rapid Paragon,



*f/16*; 2 sec., April, sunshine, 3 p.m.; Thomas's T.C.L. Printed too deep, and too much uninteresting foreground.

GEAR, J. H. (London).—"The Morn is Bright and Grey." Eury-scope, Perken and Rayment, *f/16*; 8 sec., October, sun covered with thin, grey clouds, 9.30 a.m.; Thomas's rapid; platinumotype C paper. "Clouds printed in from another negative." A very good study, but the lines of cottage roof too formal.

GEEKIE, S. (Coupar Angus).—"Linn of Campsie." Landscape, *f/32*;  $\frac{3}{4}$  sec., August, sunshine, 3 p.m. Too much foreground, flat, and poor; negative wants intensifying.

GEEKIE, A. (Abbotsville).—"Bit on the Tay." Lens R.R., *f/32*; 4 sec., October, bright and diffused light, 1.30; Ilford. This was evidently taken in sunshine, from the shadows, but printed far too much.

GREENLEAVES, E. (Bournemouth).—"A Dorset Home." Lancaster's Inst., *f/22*; 10 sec., September, dull light, 4 p.m.; Ilford ordinary. "The negative prints quickly; was developed with hydroquinone." A very good print technically.

GIBBS, A. (Bristol).—"Abbot's Pond." Wray's 5 by 4 R.R., *f/16*; 35 sec., May, sun just setting, 7 p.m.; Thomas' E.R. Printed far too deep, but a pretty little bit.

GIDDINS, W. (London).—"A Mist on the Mountain Stream." Watson's R.R., *f/22*; 1 sec., October, good light, but hazy, 11 a.m.; Edward's inst. Iso.; hot-bath platinumotype. The foreground is pitchy black, and would pay for dodging.

GILBERT, B. (Birmingham).—"Softly Falls the Summer Night." R.R., *f/25*; 4 sec., September, subdued sunny light, 6 p.m.; Thomas. The foreground too dark, and the whole of the tree branch on right wants painting out. It is questionable whether this would not be more reasonably included in River Scenery.

GOLDING, A. J. (London).—"Here winds a Path across the Heath." Beck R.R., *f/16*; 2 sec., April, sun setting after a bright day, 6.30; Thomas; bromide. The left-hand side is too black; a lighter tone would suit it, and it wants figures—a pretty bit made from nothing.

GOULD, W. R. (London).—"Sunshine and Shade." Underwood's quarter-plate Instanto, *f/32*; half-second, very bright light, 2.30 p.m.; Edwards's medium. "At the time I took the picture I had only been an amateur for six months." Most fearfully patchy, and not improved by figures.

GREGORY, C. (London).—"Sbanklin Chine." R.R., *f/22*; 22 sec., without figures, and 8 sec. additional with figure, July, dull light, 6 p.m.; Edward's Isochromatic. "Should have put more sky in, but was afraid of halation and had no backed plates, and though such a long exposure, came out quite correct, except the figure, which was over-exposed." Possibly one of the least unpleasant prints of this well-known spot we have seen lately.

HACK, H. (Fife).—"Pathhead Dens." Dallmeyer wide-angle landscape, *f/32*; 3 sec., April, very good light, 3.30 p.m.; Ilford. This print as nearly as possible represents evening twilight about 8 p.m.; it is so deeply printed.

HALLETT, C. J. HUGHES (London).—"After the Day's Work." Perken, Son, and Rayment R.R., *f/24*; 2 sec., September, bright sunshine, 2.45 p.m.; Ilford ordinary; Ilford P. O. P., sulpho-cyanide. "A good deal of foreground had to be taken in to get the reflection, and no more of the mill could be taken, as the photo was taken from a bridge. Entirely untouched." Too much foreground, and diffused light and a side view would have given more artistic result.

HARDCASTLE, A. (York).—"The Cottage Down the Lane." R.R., 8 by 5, *f/16*; 3 sec., March, fair light, 3 p.m.; Ilford ordinary,  $\frac{7}{8}$  by 5. Too black and white.

HARDMAN, MISS F. A. DE R. (Reigate).—"A Chat by the Way."

R.R., *f/22*; 2 sec., April, bright sunshine, 3.45 p.m.; Ilford ordinary; platinumotype, hot bath. Far too flat and grey.

HARRIMAN J. (Henley).—"Xmas day at Henley." R.R., *f/8*; fog, 2 sec.; Mawson. "Plate over-exposed and intensified." Print over-exposed and poor.

HARTLEY, C. (Hebden Bridge).—"On the Hebden." Single, *f/23*; 6 sec., May, sunshine, 3 p.m.; Ilford ordinary. "This is a view on the River Hebden, at Hardcastle Craggs, in Yorkshire." The left-hand bank is far too black, and it is without any sunshine; over-printed.

HAWES, W. (Aberdeen).—"Bowbutts Smithy." Single, *f/22*; 3 sec., June, bright sunshine, 4 p.m.; Castle. "Only commenced photography last summer." Fearfully over-printed, and has lost all its sunshine.

HAWTHORNE, W. T. (Whithorn).—"Young Botanists." Optimus, *f/22*; 5 sec., March, sunlight, 4.30 p.m.; Ilford rapid; Ilford P.O.P.; "Over-exposed negative, so had to intensify clouds, separate negative." Still wants intensifying; too flat now.

HAYLES, W. (Cambridge).—"Surrey Cottages." Wray's R.R., *f/45*; 10 sec., September, bright sun, 11 a.m.; Ilford. This would have scored even more if not printed so deep.

HEATON, H. (Southport).—"The Avenue at Pau, France." Taylor's R.R., *f/16*; about 1-4th sec., February, cloudy, but a little sunshine, about 4.30 p.m.; Edwards's Isobromatic films. Over-printed and over-toned.

HIDE, J. (Liverpool).—"A Lane." Lancaster's Instan. quarter-plate, *f/14*; 10 sec., March, dull, 4 p.m.; Ilford ordinary. "Plate a little over-exposed, about 8 sec. correct exposure; pyro developer." Printed too deep, and spoilt by vignetting.

HINSHELWOOD, N. (Kensington).—"Cockington Village." Wray's R.R., half-plate, *f/22*; 7 sec., May, dull, cloudy, grey sky, 11 a.m.; Ilford ordinary; Ilford bromide paper (slow); developed with hydroquinone. "The plate developed in a coal cellar, as my dark-room was out of order. Printed by the incandescent electric light in 25 sec. at 20 in. distant." A well-known spot, and is even represented exactly as our competitor has it in Abney's "Instruction in Photography."

HOLT, H. (Liverpool).—"A Peep on Lake Windermere." Wray's 10 by 8 R.R.; 8 sec., May, good light, 1 p.m.; Wratten's instantaneous. "This picture is from Ferry Nab, and appears generally overlooked. I was up this Easter, and the picture is now quite spoilt by a house being built." This is spoilt by the tree-branch on the right.

HUDSON, H. (Rugby).—"The Edge of the Wood." Underwood's Instanto; 2 sec., August, bright sunshine, afternoon early; Ilford ordinary. Another print without sun. By no means artistic.

HUGHSON, A. (Chester).—"An old Wayside Cottage." R.R., *f/16*; 5 sec., July, sunlight, 4.25; Ilford ordinary. Far too hard and chalky.

HUMPHREY, C. (Luton).—"Hoo Lodge." Eury-scope Optimus, *f/32*;  $\frac{1}{2}$  sec., March, no sunshine, 4.30 p.m.; Thomas E.R. "The above was taken with a detective camera on a fence." The camera was not straight; not artistic; too much foreground.

HUMPHREYS, W. (Netherton).—"A Misty Morn." Eureka R.R., *f/11*; about 3 sec., March, misty, 8.10 a.m.; Thomas E. R. "There had been a slight hoar frost, which was rapidly disappearing under hazy sunlight." Technically, a very bad print. It is fearfully fogged.

INGHAM, W. (Rochdale).—"Lawton's Farm, Alderley Edge." R.R., *f/24*; 10 sec., June, diffused, 6 p.m.; Marion's ordinary. "This view was taken on half-plate for the purpose of a lantern-slide." Too much foreground; print over-exposed.

INGRAM, G. (Berks).—"The Boathouse on the Lark." Swift's 9 by 7 Paragon, *f/32*; 10 sec., April, sun behind a cloud, 3 p.m.; Thomas' E.R. "I wanted to introduce a little life into this picture,



No. 4.

"SPRINGTIME."

[R. Br. dley.]



it failed me at the last moment." Wants two inches off foreground; over-toned.

IVE, E. (Henley-on-Thames).—"A Peep at Park Place." R.R.,  $f/16$ ; off and on; April, sunshine, 1 p.m.; Castle plate. Spoilt by the bough at the top.

JAMES, A. (S. Wales).—"A Gloucestershire Landscape." Ross's R.S.,  $f/11$ ; drop shutter, September, bright light, 1 p.m.; Thomas' extra rapid; platinotype, hot process. "A hazy morning." Flat print, too much foreground.

JAMIESON, A. (Lanark).—"Village of Manchline." R.R.,  $f/22$ ; 4 sec., Sept., sunshine, 10 a.m.; Castle half-plate. The fence on right spoils it; actually taken from wrong point of view.

JENKINS, G. (Surrey).—"Ruins in Basingstoke Cemetery." Burr's 7 by 5 doublet,  $f/32$ ;  $2\frac{1}{2}$  sec., May, weak sunlight, 1 p.m.; Thomas'. Too chalky and not artistic.

JEROME, B. (Sussex).—"Early Spring." Lancaster's Inst.,  $f/32$ ; 4 sec., April, bright sunlight, 4 p.m.; Ilford ordinary. An uninteresting stretch of panorama.

JESSOP, MRS. E. (N. Devon).—"Brushwood, Somerset." Rouch's French,  $f/44$ ; 3 sec., April, bright light, 11 a.m.; Barnett's ordinary. Wanting in definition, and a little under-developed.

JUDSON, T. B. (Worcester).—"Hardcastle Craggs." Perken and Rayment's Portable Symmetrical,  $f/22$ ; 4 sec., July, sun shining, light good, 5 p.m.; Mawson's Castle. Printed too deep, and not a pleasing tone.

KAUFFMANN, J. (Switzerland).—"The Sagentobel Waterfall, near Zurich." French R.R.,  $f/16$ ; 3 sec., March, fairly good light, 11.45 a.m.; Dr. Smith's Swiss plate (backed); silver. "This is my second year at photography, having only taken up same a year and seven months back." Too many branches and cross lines spoil this.

KEYTE, G. (Rams-gate).—"The Mill Stream." Lancaster's Inst.,  $f/11$ ; 3-4ths sec., August, dull light, noon; Pall Mall ordinary. A very inartistic corner.

KINSLEY, J. (Bridlington Quay).—"Wansford, Yorkshire."  $f/64$ ; 15 sec., April, sunny, 11 a.m.; Ilford. An uninteresting subject, printed in the sun.

LEE, F. M. (North Wales).—"Rhyddlan Castle." Watson's R. R.,  $f/32$ ; 3-4ths sec., March, full sunlight, 4.15 p.m.; Paget xxx.; Ilford P.O.P. "This is the first time I have entered in a competition." Too much foreground, flat, and over-toned.

LEGG, A. D. (Cheshire).—"Lake Thirlmere." Taylor, Taylor, and Hobson,  $f/22$ ; 2 sec., 16th April, 1892, sunshine, about 10.30 a.m.; Paget's xxx.; silver. "Taken between heavy snow storms." Over-exposed and a panoramic view, always a difficult subject to make a picture of.

LEGG, C. (Torquay).—"A Halt by the Way." Wray's,  $f/22$ ; 2 sec., March, bright sun, 2.30 p.m.; Barnett's ordinary; bromide. The whole of the left bank wants painting over so as to lighten it.

LEWIS, A. (London).—"The Gardener's Pride." Optimus R.R.,  $f/16$ ; instantaneous, August, very bright, 2 p.m.; half-plate, Thomas' E.R. "Just as exposure was made, wind blew the spray in one direction, and it suddenly came over dull." By no means artistic, and printed too deep.

LEWIS, G. (Tunbridge Wells).—"Canterbury, from Westgate Tower." Dallmeyer's R.R., 6 by 5,  $f/17$ ; sunlight, 1 sec.; Edwards's xl. instantaneous, pyro-ammonia. A good print technically, but not artistic.

LINTOTT, B. (Horsham).—"The Talbot Yard." Sands and Hunter's

R.R.,  $f/16$ ;  $\frac{1}{2}$  sec., October, diffused light, 9 a.m.; Edwards's Iso. instantaneous. We should prefer this with the pail cut right off and the clouds softer and lower down.

MACADAM, J. (India).—"Glimpse of an Assam Tea Garden." Rapid rectilinear,  $f/64$ ; 6 sec., very bright light, 8 a.m., October; Wratten's instantaneous. A very good print; soft and full of sunshine.

M'CLINTOCK, R. L. (Woolwich).—"Summer." Lancaster's Rectigraph, half-plate; full aperture,  $\frac{1}{2}$  sec., with Newman's shutter, June, bright sunlight, about 2 p.m.; Ilford ordinary. "The negative is a strong one, and was taken in bright sun with a short exposure so as to bring out the wavelets clearly." Just a little too much foreground, but a very good print.

M'MURDO, J. (Belshill).—"At Work." Optimus R.R.; Ilford half-plate;  $3\frac{1}{2}$  sec., sunshine,  $f/16$ . A very pretty bit spoilt by over-printing and by the figure of an amateur who has evidently no focussing-cloth.

MALAN, H. N. (Epsom).—"The Mill Stream." Ross R.S.,  $f/19$ ; 2 sec., June, very good light, 10 a.m.; Ilford ordinary. The best bromide print in the competition; the figure is out of place, and a couple of urchins in the near foreground would have made this.

MANGHAM, P. W. (Sheffield).—"April Snow." Single,  $f/22$ ; 10 sec., April, 1892, light poor, 6.20 p.m.; Ilford ordinary. Printed too deep, and shadows too black.

MANNERS, S. (London).—"In Battersea Park." Lancaster's Instno.,  $f/20$ ; 8 sec., July, diffused light, 4.30 p.m.; Ilford ordinary. A very good view of the well-known rustic bridge.

MARSLAND, W. (Ashton-under-Lyne).—"Middlewood." Wray's R.R.,  $f/16$ ; 10 sec., July, diffused light, about 4.30 p.m.; 5 by 4, Ilford ordinary; P.O.P. toning bath. So deeply printed as to make it difficult to see what is in the picture.

MASSE, H. J. L. J. (Ealing).—"Perivale Church and River Brent." Lancaster's Instantograph,  $f/30$ ; Tylar's Window shutter, 1 sec., April, bright

sunlight, 12.15; Ilford extra rapid. "Developed with Rodinal. My first attempt with this developer. It works nicely and clean, though the negative seems very soft." Another case of over-printing.

MATTHEWS, J. C. (Torquay).—"Old Forge, Cockington." Lancaster's quarter-plate Instantograph,  $f/16$ ; 4 sec., March, dull light, 6 p.m.; Castle. "I have only been at it a few months, but hope before very long to let you have some better specimen." Wants figures, and the right-hand side is double in outlines.

MATTHEWS, J. R. (Carlisle).—"Waiting." Meniscus; 2 sec., August, dull light, beginning to rain, 6 p.m.; Marion's ordinary. A smirking figure with his feet cut off. Not inland scenery.

MATTHEWSON, G. (Kirkcaldy).—"Lover's Den." R.R.,  $f/40$ ; 3 sec., April, good light, 3 p.m.; Excelsior rapid; sun. Another unsuitable figure spoiling a print.

MAY, C. R. (London).—"Pharaoh's Bed." Wray W.A.R., U.S. 64, 1 sec., February, bright sunshine, 4.10 p.m.; Thomas' T.C.L.E.R.; platinotype, new cold process. "Developed negatives with pyro and ammonia." Two inches could be spared from foreground, but it speaks well for paper and operator.

MEADWAY, F. W. (London).—"South Down Farm." Landscape,  $f/20$ ; 4 sec., dull light, 4 p.m.; Paget xxxxx. "Clouds worked on ground glass and used as a negative." Leans too much to one side.

MEYNELL, H. (Stoke-on-Trent).—"Distant Dovedale." R.R.,  $f/16$ ; 1 sec., June, light bright, 3.15 p.m.; Thomas' slow landscape. Very good



No. 5.]

SHAPWICK CHURCH.

[G. Salton-Symons.



MILLER, C. (London).—"Bats-hill, Redhill." R.R.,  $f/32$ ; 150 sec., August, dull light, 8 a.m.; Marion's ordinary. Very good.

MISSELBROOK, V. (Southsea).—"A Country Road." Rapid rectilinear,  $f/32$ ;  $1\frac{1}{2}$  sec., April, hazy sunlight, 2.30 p.m.; Thomas' extra rapid; Morgan and Kidd's smooth bromide paper. A fearfully over-exposed and uninteresting print.

MITCHELL, W. (Keighley).—"Blea Tarn." Beck's R.R.,  $f/16$ ; 6 sec., May, dull, with sunlight on the foreground, 12.30 p.m.; Ilford platinotype, hot. A very good result, well up in the front.

MORELAND, J. C. (Belfast).—"Coming through the Glen." Optimus R.R., half plate,  $f/16$ ; about  $\frac{1}{2}$  sec., April, strong sunlight, 11 a.m.; Ilford special rapid. This would have been better without the figure.

MORRIS, A. T. (Manchester).—"Canal, Worsley, Manchester." Wray's R.R.; 3 sec., June, diffused, 11.30 a.m.; Ilford ordinary. "This is my first attempt at exhibiting, also of combination printing. I have found very great difficulty in getting good cloud negatives." Would have been improved if name had been cut off and had not been toned so far.

MOSS, C. (Sydenham).—"Sanderstead Lane." R.R.,  $f/32$ ; 9 sec., March, sunlight, 4.30 p.m.; Ilford ordinary. "Started photography in October, 1891. This is amongst the first dozen plates I have exposed on landscape subjects. Be as gentle as you can." Over-printed and over-toned. With a little more care, a good result could be obtained.

MULLER, T. M. (E. Grinstead).—"Rusticity." Optimus R.R.,  $f/24$ ; 11 sec., April, weak sunshine, about 12.15; Ilford ordinary. "This view was taken during an interval of the passage of heavy snow clouds over the sun." Over-printed.

MUMMERY, C. (Hampstead).—"The Lane, Hampstead." French R.R.,  $f/22$ ; 6 sec., April; very good light, 5 p.m.; quarter Ilford ordinary. A good subject utterly spoilt in printing.

LUCK, R. (Durham).—"Sheep and Lambs." Swift,  $f/16$ ; 1-10th sec., April, sun, 11.15; Castle. Very flat; would probably make a good lantern slide.

MAIDES, T., JUN. (Midhurst).—"Close Walks." Lancaster's International,  $f/20$ ; 4 sec., March, dull, 2.30; Ilford ordinary. "This is a pleasant walk adjoining the town, very thickly studded with trees, consequently very dark to photograph." Printed far too deep.

MARSDEN, H. J. (Derbyshire).—"Village End," Osmaston. Ross R.S.,  $f/64$ ; 4 sec., April, bright sunshine, 4 p.m.; Thomas' extra rapid. The clouds in this hardly seem correctly lit, according to the shadows in the foreground.

MASON, M. (Suffolk).—"Solitude." Lancaster's Instanto.,  $f/20$ ; 3 sec., April, bright sunlight, noon; Marion's ordinary; platinotype. "First competition, quite a beginner." A very good rendering of the title.

MERCER, R. H. (Manchester).—"Mabfield." Laverne's R.S.,  $f/22$ ; 8 sec., April, sunshine, 5 p.m.; Ilford rapid; bromide. Far too flat, print rather over-exposed.

MULLER, H. (East Grinstead).—"East Court Park." 5 by 4 Optimus R.R.,  $f/32$ ; 12 sec., April, sunshine, 12.30; Ilford ordinary. Printed far too deep.

NASH, C. E. F. (Cheltenham).—"On the Esk, Egton, near Whitby." Portable symmetrical, Ross, U.S. 32; 1 sec., August, afternoon; Edwards' Iso., medium. A very good study, but spoilt by a want of definition on left-hand and centre of picture.

NIBLETT, MISS J. (Ledbury).—"Church Lane." Atkinson R.R.,  $f/22$ ; 3 sec., October, 3 p.m.; Edwards' landscape. A very good print, but would be much improved by some figures or a coster's cart.

NETTLESHIP, F. (Yorkshire).—"Entrance into Blyth, Norway."

Optimus, R. R.,  $f/32$ ; 4 secs., April, fairly good light, 3 p.m.; Ilford ordinary (yellow label). "This is my first competition. Have only been photographing nine months. Developed with pyro ammonia." A very pretty picture spoilt by being printed too deep.

NORTHWOOD, W. (Wordsley).—"A Staffordshire Lane." Lancaster's International, cap off and on; April; Ilford ordinary. A very good half-plate silver, print of rich warm tone, full of sunshine, and exceptionally happy in grouping; it could be still further improved by painting over the too black branches in tree on right.

OWEN, C. (Reading).—"Middle Beck, Yorkshire." Taylor and Hobson,  $f/32$ ; 4 sec., August, very dull light, no sun, 11 a.m.; Thomas's. "A very dull day, and rain during the night." Over-toned, but otherwise showing good work.

PALLAVICINO, SIGNORINA F. V. (Rome).—"Corpus Christi Procession, Vienna." Inst. Excelsior plates, 10 a.m., perfect day. Printed rather too deep, but a good instantaneous study.

PARTRIDGE, F. (Launceston).—"Treglith Mill." Lancaster's Rectigraph,  $f/20$ ; 1 sec., March, sunlight, 11.30 a.m.; Ilford ordinary. "The house being white, development was begun with a very small dose of pyro, to avoid too great contrast of shadow. Developed with pyro and soda potash." A very good print, showing careful work.

PASCOE, G. S. (London).—"Drinking Fountain, Victoria." R.R.,  $f/32$ ; 2 sec., June, good light, 7.5 a.m.; Edwards's Isochromatic, medium; platinotype, hot bath. "This was taken in the early morning, two miles from my home. I got back and had it developed, fixed and washed before 8 a.m." Printed too deep, too much foreground.

PATTISON, J. W. (Darlington).—"Springtime." R.R.,  $f/22$ ; cap off and on, April, very good light, noon; Barnet. Printed too deep, and over-toned.

PAYNE, A. (Brockley).—"The Observatory, Greenwich." Single,  $f/24$ ; 1 sec., March 19th, sunlight, about 3.30 p.m.; Thomas' extra rapid; Ilford P.O.P., sulphocyanide amm. "This was taken at the moment of a sudden burst of sunshine, and although the building was well lighted, the trees at the bottom of the hill seemed still to

remain in shadow." Printed far too deep, and print wants trimming down.

PEARCE, W. B. (Wednesday).—"Glade in Sutton Park." R.R.,  $f/32$ ; 2 sec., April diffused sunlight, 2.15 p.m.; Ilford ordinary. Printed too deep and wants foreground.

PICTOR, A. J.—"Lancaster's Instanto.,  $f/20$ ; 4 sec., Ilford ordinary half-plate, April, 1 p.m. Would have been improved by omission of figure, and also if the left and foreground had been sharp.

PICTOR, V. S.—R.R. lens,  $f/16$ ; 4 sec., April, 12.30 p.m., bright light; Ilford half-plate ordinary; Ilford bromide, slow, 15 sec., at 8 in. from ordinary Duplex lamp; ferrous-oxalate developer. The print fearfully over-exposed; 10 sec. would have been plenty.

POLLOCK, J. (Belfast).—"Eventide." Beck's R.R.,  $f/16$ ; 2 sec., April, weak sunshine, 4 p.m.; Thomas's T.C.L. This print should not have been sent in to inland scenery, being a seascape.

POPHAM, H. N. (S. Shields).—"After the Winter's Blast." Underwood's,  $f/22$ ; 6 sec., April, dull, 3.40 p.m.; Barnet. Utterly spoilt in the printing.

POTTER, A. (near Rugby).—"A pretty Lane." Lancaster's Inst. lens,  $f/20$ ;  $\frac{1}{2}$  sec., April, sunshine, 3 p.m.; Ilford ordinary. Not a pretty photograph—overtone, flat, and poor.

POTTER, W. R. (Rutland).—"On the Lyn." Lancaster's Instanto.,  $f/30$ ; 5 sec., dull, 3 p.m.; Ilford rapid. "This photograph was taken after a heavy shower of rain, making the exposure shorter." The paper has shifted in printing, or else the camera moved; the whole is out of focus and doubled.



No. 6.]

"A PEEP ON LAKE WINDERMERE."

H. Holt.



POTTS, A. M. (Chester).—"Tis Sweet to Visit the Still Wood." Lancaster's Silver Ring, *f*/16; 1 sec., April, bright light, 10 a.m.; Paget's ordinary. "Negative and print untouched." Over-printed and over-toned.

FRITCHARD, MISS E. M. (Leighton Buzzard).—"Sunset." Wray's R.R., *f*/8; 15 sec., March, clear but dull light, 4 p.m.; Edwards' Iso. A very fair cloud study, but very badly mounted.

RENDELL, H. (Devon).—"Winsford." Wray's 5½ in., R.R., *f*/16; ½ sec., September 10th, 1891, sunshine, noon; Paget xxx.; Ilford P.O.P., sulpho-cyanide. "The plate is rather thin. I used eiko cum hydro for the first time, and erred a little in development. There were slight markings, too, on plate." By intensification a very good result could be obtained; a pleasing little study. Carry development further.

RICHARDSON, MRS. J. T. (Nottingham).—"The Dynamo Hut." Dallmeyer's triple achromatic, *f*/40; 3 sec., August, sun, 11 a.m.; Ilford ordinary. A well-selected subject, and showing careful work, but toning might have been carried further.

RIGBY-JONES, T. (Blundellsands).—"A Quiet Spot." Ross' R.S., *f*/8; ½ sec., April, rather sunny, noon; Ilford ordinary. "I have only had a camera five months, and during two months of this time was confined to the house through illness." Over-printed, and we should also say, untuned.

ROBERTS, D. O. (London).—"Richmond Park." Swift's Paragon, *f*/32; 2 sec., April, bright sunlight, 2.30 p.m.; Thomas' T.C.L.; Ilford bromide. A good print of an uninteresting subject, and not improved by figure.

ROBERTSHAW, J. (Heptonstall).—"The Stepping-stones on the River Hebden." French R.R., *f*/22; about 6 sec., April, rather dark but clear, 3.30 p.m.; Ilford ordinary. "The camera and dark slides I made myself, the lens I bought second-hand for 20s." Very fair, but clouds are too dark.

ROSCOW, S. (Bolton).—"Old Cottage, Prestwich." R.R., *f*/16; 4 sec., February, moderately good light, 3.25 p.m.; Mawson and Swan's Castle. "I have had camera about eighteen months, and have to thank the AMATEUR PHOTOGRAPHER for much of my information." A very good print showing very careful work; some objects to break up the straight lines of road would have improved it.

SADLER, W. H. (Horsham).—"Swanbourne Lake, Arundel." Landscape Dallmeyer, *f*/24; cap off and on, August, brilliant light, mid-day; Ilford ordinary; platinotype, hot bath. A very good print, but wants clouds.

SEAMER, E. (Bury St. Edmunds).—"Fornham Park Gates." Lancaster's landscape, *f*/32; 2 min., October, dusk, 4.30 p.m.; Ilford ordinary. "The sun had about set, hence the long exposure; the foliage was also very heavy." Fearfully over-printed.

SHEARDOWN, P. (Dublin).—"Avenue of Trees at Lucan." Fallowfield's R.R., *f*/22; 5 sec., end of September, dull light, 3.30 p.m.; Ilford ordinary. "The day on which this photograph was taken was very dull for September. The print was squeezed on ground glass." A very good print and well to the front.

SHEFFIELD, F. (Norwood).—"Under the Elms." Single, *f*/24; 5 sec., September, bright sun, 11 a.m.; Ilford rapid. "I gave such a long exposure to get detail in the shadows." Over-printed and lacking in sharpness in left-hand corner.

SHIMMON, O. (Ipswich).—"In Gainsborough Lane." French R.R., *f*/16; 2 sec., Easter, fair, 4.30 p.m.; Ilford ordinary, half-plate. "The light had been good all the day, but the sky was becoming overcast before I had opportunity." Over-printed and a by no means pleasing colour.

SILVER, A. JUN. (Wolverhampton).—"A Bye Lane at Penn." No name; landscape single, *f*/32; 15 sec., April 19th, 1892, sunlight, 4 p.m.; Ilford ordinary; silver albumenised paper, tungstate soda, 40 gr.; water, 7½ oz.; gold, 1 drachm. Negative wants intensifying, is over-exposed and print flat.

SIMPSON, J. (Kingstown).—"The Old Mill, Jesmond Dean." Adam's Ideal camera, *f*/11; 1-4th sec., June, bright sunshine, slight mist, 3 p.m., Thomas's extra rapid. Printed too deep, and would have been improved by some figures in left-hand corner.

SMALLPEICE, M. (Windermere).—"Footpath from Windermere to Droemer's Stile." Single view, *f*/40; 5 sec., April, sunshine, 7.30 a.m.; Ilford ordinary; developed with sulpho-quinol. Too much foreground, and too deeply printed.

SMALLBRIDGE, C. (Devon).—"Reflections." Optimus Euryscope, *f*/16; 1½ sec., April, sunshine, 2.30 p.m., Thomas's E. R. Too much foreground.

SMITH, A. (Surrey).—"Milking Time." R.R., *f*/8; 1½ sec., April, dull light, 4.20 p.m., Thomas's T.C.E.R., hot-bath platinotype. "The exposure given above was, as near as I could judge, 1½ sec., with Thornton-Pickard time shutter." The shed spoils this, being far too formal in outline.

SMITH, A. (West Bromwich).—"Kirby Muckloe Castle." Ross' R.R., *f*/64; 1 sec., August, good light, 2.30 p.m.; Thomas' E. R. A fine print showing enormous detail.

SMITH, J. JNR. (Liverpool).—"On the Dee." French lens, *f*/16;

2 sec., April 18th, good light, 3.30 p.m.; Edwards'; Ilford P.O.P. "Taken at a club outing. Exposure made after a storm." Too much foreground, flat, and spoilt by the yellow mount.

SNOWBALL, G. (Newcastle).—"Hazy Morning on the Wear." French, *f*/32; 3 sec., March, hazy light, 12.45; Castle. "The day was cloudy to start with, and by 12 o'clock the river had a very hazy appearance. The figure is a pit boy out on strike, who was employed carrying my baggage. Clouds are printed in, and negatives untouched." At least two inches could be spared from foreground, but print shows careful work.

SOLTON-SYMONS, G. (Plympton).—"Shapwick Church." March, 3 p.m., dull light, 3 sec.; Wratten's instantaneous. A very good print, but a little too flat.

SPALDING, F. (Norwich).—"A Lane at Keswick." Ross 7 in., smallest; 10 sec., September, bright sunlight, noon; Ilford ordinary. Too patchy, should have been taken the other way of plate, and figures not an improvement.

SPILLER, A. L. (London).—"Parsonage Row." Lancaster's instantaneous, *f*/20; 2 sec., August, sunlight, afternoon; Marion's ordinary rapidity; platinotype (hot bath). "This is my first attempt at platinotype printing." Very fair, a little over-printed, and wants clouds to break the left side of sky.

STAMP, J. (Birmingham).—"Scene in Malvern Park." French rectilinear, *f*/20; shutter up and down, April, bright sunlight, 5 p.m.; Ilford ordinary. "This is my second season in photography, but I have not before competed. This is the last of six plates exposed yesterday, and came out best. Ilford hydrokinone developer." A ideous pink colour, over-printed and over-toned.

STEINA, G. (Genoa).—"Verdemia in Liguria, a Siesta." Lancaster's, *f*/20; off and on, October, 2 p.m., Derwent. The tree wants painting over, so as to lighten it, and the print is too full of contrast.

STOKES, J. (Southampton).—"A Quiet Path." Perken, Son, and Rayment Optimus, *f*/22; 3 sec., April, good light, 3.30; Ilford ordinary; platinotype, hot bath. A very good print, but would have looked better if taken the other way of plate.

STONE, E. (London).—"A Lane near Dorking." Lancaster's single, *f*/22; 4 sec., April 21st, good light, 6 p.m.; Edwards' Isocromatic, ordinary silver, borax. Too much uninteresting foreground; the whole wants interest.

STONE, C. S. (Pinner).—"Entrance Lodge, Haydon Hall, Eastcot." Underwood's *f*/16; 3 sec., August, bright afternoon, Fry's ordinary. A by no means artistic print, and not improved by the masking.

TANDAN, R. (Edinboro').—"The Craigmillar Castle." Crouch's R.R., *f*/16; 1-12th sec., Thornton-Pickard shutter, April, fairly bright light, 1 p.m.; Eastman's film spool. "The photograph was taken in an interval between two snow showers." Camera not straight, and lacks sharpness on left side.

TAPSON, E. J. (Brockley).—"View of Carshalton Village." Single achromatic, *f*/20; 2 sec., March, diffused light, 3 p.m.; Ilford rapid (white label). "Negative and print untouched. My first picture entered for a competition. Sent in hoping it may score. Mounting is done by me." Printed too deep, and too much foreground.

TAYLOR, W. (London).—"Denham." R.R., *f*/24; 2 sec., 26th March, good light, 12.30; Marion's rapid. Print over-exposed and over-developed; negative, we should say, a good one, but not an artistic subject.

TEGLIO, R. (Genoa).—"Landscape Ross R. S., *f*/16; 1-8th of a sec., March, good light, 10 a.m.; Lumiere. "Being the first time I compete I am anxious to know how good or how bad my work is." An inch could be spared from foreground, is slightly under-exposed, and too patchy. It shows care in printing.

THELWELL, H. (York).—"Latimer Bridge, on the Chess." Ross R. S., *f*/32; 2½ sec., Thornton-Pickard shutter, sunlight, September, 11 a.m.; Marion rapid. "A slight haziness came on suddenly, causing loss of brilliancy." Negative wants intensifying, and print is covered with millions of cracks.

THIRKETTLE, W. (London).—"Temple Bar." Single, *f*/11; 5 sec., August, bright light, 5.30 p.m.; Ilford ordinary. Suffers terribly from halation, but a good print.

THOMAS, C. H. (Enfield).—"Fairy Glen." Lancaster's half-plate Silver Ring R. R., *f*/16; 5 sec., June, diffused, 4 p.m.; Ilford ordinary; silver print. "Large drops of rain were beginning to fall when exposure was made. This is my first exhibit of work." A little too flat, and the figure was not wanted.

TIMMINS, C. A. (Runcorn).—"Country Lane." Ross R. R., single, *f*/11; 4 sec., April, bright light, 3 o'clock; Edwards's. Too much foreground, and wants more careful printing-in of clouds.

TODD, A. (Kirkcaldy).—"Dunikier Den." Lancaster Instan. lens, *f*/10; 3 sec., April 9th, sunshine, 3.30 p.m.; Lancaster plate; Ilford P.O.P. A most awful example of over-printing. The figure is hideous and should have been taken other way of plate.

TURNER, A. R. (Leeds).—"Kirkstall Abbey, near Leeds." R.R., *f*/32; 3 sec., April, fairly good, no sun, 4 p.m.; Paget ordinary. "This is my second attempt at outdoor. I commenced last October. Have



never competed for prize before, and have only had practice in back garden." Too much foreground, figure not wanted, over-printed, and over-toned.

TRANTER, W. (London).—"View in Epping Forest." Landscape,  $f/8$ ; 5 sec., April, sunlight, noon, Thomas E.R. "I have only been at this about six months, and this is my first trial in figure and landscape." Fearfully over-exposed, over-printed, and we should say, absolutely untuned. A disgrace to anyone. We shall be glad to help competitor if he will write.

TWIGG, MRS. H. (W. Stafford).—"The Cliffs, Shugborough Park." Ross'; 4 sec., June, 4 o'clock afternoon; Ilford plate, ordinary. Wants contrast and figures; too formally placed.

TWIGG, H. J. (Stafford).—"The Essex Bridge." Lancaster's Instanto, smallest stop but one; 5 sec., June 16, 1890, 3.30 p.m.; Ilford; silver, borax. "This was taken nearly two years ago. If not successful in gaining medal, shall be glad of criticism." Fearfully over-printed, an inch too much foreground, and the middle portion of the bridge stretches right across the plate; both ends are cut off.

TYLER, C. (London).—"The Pump's Dry, but there is Water in the Brook." R.R.,  $f/32$ ; 3 sec., April, light good, 12.30; Ilford ordinary. "I thought the picture would be improved by cutting off half-inch of the sky, but noticing there have been several comments *re* same in the AMATEUR PHOTOGRAPHER, I thought it was advisable to let it remain." The print would certainly be improved by a good deal of trimming.

VESEY, A. (London).—"A Nut Lane." Watson W.A.R.,  $f/16$ ; 2 sec., August, bright sunshine, 1 p.m.; Ilford ordinary. Should have been taken in diffused light, other way of plate; too patchy, and a hideous pink tone.

WADLING, J. E. (Toward Point).—"Arrochar." Taylor,  $f/45$ ; 2 sec., June, sun, semi-tropical heat, with haze, 2 p.m.; Paget xxxxx. "Printed in frame until detail in densest part is faintly indicated. Kallitype for black tones. An attempt at Kallitype, but fear I have not done justice to the process. The smoke from a fire under the tree, and the haze from semi-tropical heat prevented my getting as clear a print as I should have liked. Kindly point out errors; I am anxious to learn." A good print, but the outline of hill and cottage roofs are too much in keeping, and this is repeated in the children; a good picture missed.

WALL, MRS. L. M. (Ashburton).—"Cottages at Buckland on the Moir." R.R.,  $f/32$ ; 8 sec., April, sunlight, 4 p.m.; Ilford ordinary. "This print is half a stereo." Over-printed and over-toned; would, have made a very good subject with a suitable figure.

WALLACE, W. (Edinburgh).—"Winter." Optimus R.R.,  $f/32$ ; 3 sec., February, clear and frosty, 2.30; Thomas' T.C.L. "A difficulty was experienced to keep the high lights from over-exposing and the shadows from under-exposure." A long exposure, and developing with about 1-10th gr. pyro to ounce, obtaining density after, would have given soft results. Too much foreground, and pink snow is not pretty, or at least natural.

WALLS, T. (Kendal).—"Bridge Across River Sprint." Optimus R.R.,  $f/32$ ; 6 sec., August, dull light, 6 p.m.; Ilford ordinary; Ilford P.O. "Rather a difficult thing to get, on account of bridge being so high, for both water and sky, and could not use W. A. lens on account of overhanging bushes." A better picture could have been made without the bridge, which is not artistic.

WALSHE, T. (Roscarbery).—"Castlereke." R.R.,  $f/20$ ; 2 sec., April, good bright light; Ilford rapid. Negative wants intensifying. A fearfully inartistic view of a castle.

WALSHE, J. (Ireland).—"Derby Manor and Grounds." R.R.,  $f/32$ ; 3 sec., October, sunshine, noon; Ilford rapid. Camera not straight; flat print, over-toned, too much foreground.

WARRINGTON, W. (Malta Dockyard).—"Ruins of Mnaira Temple." Lancaster's R.R.,  $f/20$ ; 1 sec., September, bright sunshine, 2 p.m.; Ilford ordinary. Print under-exposed, and wants clouds.

WATSON, T. (Whitby).—"Wizard's Glen, Mulgrave Woods." Lancaster's Instanto,  $f/32$ ; 8 sec., June, bright outside, shady in glen, 11 a.m.; Jerome (Marion, about 1888). Far too patchy.

WELCH, J. H. (Liverpool).—"Bolton Woods." Wray's 8 by 5 R.R.,  $f/45$ ; 10 sec., September, light good, 3 p.m.; Wratten's Ilford instantaneous. Wants an inch off foreground, and the lights in sky give it a patchy appearance. Shows very careful work.

WERDMULLER, H. (London).—"A Shady Pool." Lancaster's Meritoire; 13 sec., June, good light, but being late in evening, under heavy foliage, necessitated a long exposure; Fry's K. S. 30 times. A very good little study.

WHEELER, A. W. (Banbury).—"Round House, Edge Hill." Lancaster's Instanto,  $f/16$ ; 2 sec., July, bright sunshine, noon; Ilford ordinary. "When the picture had been taken had practised photography about six months. Please criticise." Over-printed, too much foreground, figure not wanted.

WHITE, R. (Ireland).—"Evening Shadows." Voightlander's medium rapid Euryscope; September, afternoon, 4 p.m.; Ilford ordinary; platinotype, hot bath. A fearfully flat print.

WHITMORE, F. (Cheshire).—"Autumn Leaves." R. S.,  $f/22$ ; 30 sec.,

October, fairly bright light, 1 o'clock; Britannia; platinotype, hot bath; "foreground focussed extra sharp, distance left soft." Wants an inch off foreground, but distance very effective.

WILLANS, G. C. H. (Huddersfield).—"Letheringset Hall, Norfolk." Watson's 8½ by 6½, R.R.,  $f/22$ ; 18 sec., November, cloudy, 10 a.m.; Sykes' "Albert." "I arrived at the exposure by means of a Watkins' exposure meter." The fences are not artistic; and toned a little too much; shows careful work.

WILKINSON, J. (Oldham).—"Houghton Hill." R. R.,  $f/45$ ; 5 sec., September, sunlight, midday; Castle. "Am quite a beginner, this being my second year with the camera. The scene is a dark pool of water surrounded by trees." Printed far too deep, and thus a good picture spoilt. Too much foreground.

WILKINSON, S. (Yorkshire).—"A Mountain Stream." Ross', 12 in. focus,  $f/22$ ; 6 sec., April, fair light for the time of day, 6.15 p.m.; Ilford ordinary. Wants two inches off left hand, and lacks brilliancy.

WILLS, JOSEPH (Carnarvon).—"Blackberrying." Ross' R. S.,  $f/16$ ; 6 sec., October, bright diffused light, 3 p.m.; Ilford ordinary; Ilford printing-out paper. Fearfully patchy and hard.

WILLIAMS, D. (London).—"Old Cottages at Winchmore Hill." Laverne's R.R.,  $f/11$ ; ½ sec., April, medium sunlight, about 12.30 p.m.; Elliott's Studio plate; Ilford's P.O.P., sulpho-cyanide. This was taken with an Ideal camera of the original pattern. Over-printed and without sunshine.

WILLING, W. (Louth).—"Fathwell." W.A.R.,  $f/20$ ; 11 sec., April, good light, 11.30 a.m.; Castle. Printed too deep; the tree branches at the top are distracting.

WOODS, G. (Hastings).—"Going Home." Dallmeyer's 11 in. R.R.,  $f/10$ ; cap off and on, February, 4 p.m.; Castle; home-prepared drawing paper. The near foreleg of the horse is very awkward, but a carefully worked and effective print.

WOOLLOMBE, R. (Bayswater).—"Corfe Castle, near Swanage." Voightlander's, 3 U.S.; 1 sec., August, sunny, with light clouds, noon; Paget's Prize plate; Eastman's bromide paper. Developed with maker's formula. Clouds were drifting about. Camera not straight, and fearfully over-developed print.

WOOLLEY, H. (Gloucester).—"Idlers." R.R.,  $f/22$ ; about 4 sec., June, subdued light, afternoon; Ilford's ordinary. "As far as I know, this subject has never been photographed before; I am very fond of these English tit-bits, and photography has opened my eyes to them more than any other study." The competitor has not made the most of his subject; had the small fry been fishing in the ditch, and the right-hand side been lighter, it would have been better.

YULE, G. W. (London).—"Leigh, Surrey." Houghton's R.R.,  $f/22$ ; 25 sec., March, very dull light, 1 p.m.; Wratten's; Eastman's bromide B. "Started photographing Easter 1890; negative of above very thin indeed, mounted, etc., by self." Print over-developed, and certainly not an artistic subject.

**Eastbourne Photographic Society.**—The Secretary of the above is arranging the programme for the ensuing six months, and being a new society has one or two dates to fill. He would like to hear from any firms at all disposed to give a demonstration of any particular process, etc. All inquiries to be made to the Secretary, E. P. S., 60, Terminus Road, Eastbourne.

**The Royal Society.**—A distinguished company assembled on the 4th inst. at Burlington House at the conversazione of the Royal Society, the guests being received by Lord Kelvin, the President of the Society; Dr. J. Evans, the treasurer; and Lord Rayleigh and Professor Michael Foster, the secretaries. The various rooms in the building were filled with objects and apparatus of scientific interest, many of them of a distinctly novel character. A most interesting and curious exhibition of photographs of flying bullets was given by Professor C. V. Boys, who described an ingenious apparatus of his own invention by which a bullet striking a wire in its progress from the barrel of the rifle completed a circuit and threw a spark on to a photographic plate, the shadow formed by the passing bullet making the photograph. It was mentioned that the bullet, passing through the air at a much higher velocity than the wave of sound, described hyperbolic curves, somewhat resembling the wash left in the wake of a steamer in passing through the water. The photographs shown included those of an aluminium bullet fired from a magazine rifle with smokeless powder, and travelling at a speed of 3,000 ft. per second. Another very interesting feature was Mr. Frederick E. Ives' demonstration of composite heliochromy, a process of colour photography which seems to reproduce with wonderful exactness the natural tints of scenes and objects. Professor Thorpe exhibited an apparatus intended to demonstrate the general phenomena of a dust explosion, more particularly coal dust, in explanation of the causes of colliery disasters, Professor Frank Clowes an ordinary miners' safety lamp, with supplementary hydrogen flame for detecting and measuring minute proportions of fire-damp or inflammable gas or vapour in the air, and Mr. J. Theodore Bent some interesting finds from ruins in Mashonaland.



## Societies' Meetings.

**Accrington.**—The monthly meeting was held on the 2nd inst., the President (Dr. Clayton) in the chair. A number of photographs taken by members since the last meeting, also an album of splendid work done by the President, were exhibited and much admired. After a pleasant discussion it was agreed to have the first excursion of the season on May 21st to Chatburn for Downham, and an exhibition of apparatus for the next meeting.

**Bath.**—An ordinary meeting was held on the 27th ult. Mr. Austin J. King, President, occupied the chair. The Chairman said the first business of the evening was a notification by the Secretary of the decease of their good friend and member, Mr. John Dugdale. Since the foundation of the Society he had worked steadily for its welfare, by giving lantern slide exhibitions, and in other ways contributing to the interest of the meetings. The Chairman then spoke of the arrangements made by the Sub-committee regarding the exhibition of photographs in conjunction with the floral show announced for May 18th and 19th, and he was pleased to say that their Sub-committee were able to report that the Floral Fete Committee not only coincided with the conditions stipulated, but placed themselves almost unreservedly in the hands of the society. He thought a most successful result would be achieved. Exhibiting members would receive a free pass. They may, or may not, at their discretion, attach their names to exhibits. There would be no awards, and consequently no unpleasant feeling. Every care would be taken of pictures sent, and the lighting arrangements would be beyond all complaint. A communication from the Photographic Convention was read by the Secretary, requesting the Society to appoint delegates to attend the Edinburgh gathering on July 11th. The Chairman then vacated the chair in order to deliver his promised lecture, "With the Camera in Spain." Mr. Austin King then entered upon his lecture, which was, throughout, listened to with the deepest interest. Critical examination of summer outfits and laying aside for the coming winter of enlarging apparatus reducing cameras, lantern slide paraphernalia, etc., were amusingly portrayed. Plentifully equipped for all sorts of subjects, and full of hope in the achievement of a rich harvest of negatives, the lecturer took an adieu of this country when the Thames wore a dense mantle of yellow fog, to penetrate which colour-sensitive plates did not avail. The dream of snapshots on an ocean-going steamer was again dispelled. Then followed rigid regulations against the camera in the neighbourhood of Gibraltar. These and other difficulties were encountered until the photographer's El Dorado was reached, the beautiful, the unique Alhambra. The lecturer's description in the first place was technical from a photographic point. He then entertained his audience with details of a general character, dating back from the earliest history down to the present day. Speaking of bull-fight photographs, Mr. King said the reason such illustrations were rare was due, not to the rapid movements of the actors so much as the large area over which the fight was enacted; thus the principal objects were by distance minimised.

**Brixton and Clapham.**—An ordinary meeting was held on the 3rd inst., Dr. J. Reynolds, President, in the chair, when a most interesting and instructive paper upon "Some Conditions Influencing the Welfare of Photographic Societies" was given by Mr. W. H. Harrison, the new Vice-President of the club. At the conclusion of the paper, a number of slides taken by Mr. Leon Warnerke (who was unfortunately absent) to illustrate his paper on "Continental Photographic Institutes" were described by Mr. Harrison, the club lantern being used for showing them. The question box was opened, and some discussion took place upon the new platinotype paper.

**Darlington.**—The usual monthly meeting was held on 9th inst., Mr. Howlett presided over a good attendance of members. An excellent paper on "Silver Printing" was read by Mr. Ensor, B.A. The members evinced much interest in the results of experiments carried out by Mr. Ensor, who warmly advocated the use of albumenised and chloride papers. Some beautiful specimens with a great range of tones were exhibited to prove the suitability of the process for all kinds of subjects.

**Eastbourne.**—An ordinary meeting was held on the 4th inst. About forty members were present. The Rev. H. G. Jameson (the President) occupied the chair. Nine new members were elected, and two names were submitted for election at a subsequent meeting. The chief business of the evening was a lecture by Dr. Habgood entitled "A Trip to the Sunny South." In a peculiarly interesting manner, Dr. Habgood recounted the leading incidents in a pleasurable trip he made through Spain, and gave a description of Spanish scenery and public buildings. He illustrated his lecture with lantern slides made from photographs he had himself taken, one of the most attractive being that of a bull fight he had witnessed, and he did not fail to improve the occasion by impressing on his audience the great pleasure to be derived from carrying a camera on a holiday trip, taking views of the most striking objects of interest, developing the negatives, and subsequently preparing lantern slides, and showing one's friends where one had been and what one had

seen, as well as keeping a record for one's own satisfaction. Dr. Habgood will continue the lecture on July 6th. The members also had the pleasure of inspecting some photographic apparatus sent for exhibition by the Fry Manufacturing Company, of London.

**Edinburgh.**—The sixth ordinary meeting was held on the 4th inst. Mr. J. Hippolyte Blanc, President, in the chair. A paper was read by Mr. James Patrick on "The Imitative and Imaginative Side of the Photographic Art." He pointed out that imitative art was not the chief aim of photography, but that it was possible to produce imaginative art. Nobody would ever be able to give a poetic conception of any subject if his only aim was imitation. Instantaneous photography had influenced the work of the painter in the matter of cloud forms, moving water, and in many other aspects. As a rule painters were very severe in their criticisms of photography; some, in fact, said that it was not art at all—mere mechanical handicraft. This rash statement, he maintained, was not true. Had the photographer not to deal with the same subjects as the painter? The photographer who could express sentiment in his work was an artist in the true sense of the word.

**Glasgow High School.**—The last meeting of the session took place on the 3rd inst., Mr. J. Laird in the chair. A selection of slides having been passed through the lantern, Mr. John Haddow gave a very instructive and interesting address on "Hand-camera Work." Mr. Haddow spoke from actual experience, which caused his address to be all the more appreciated, and gave some good advice on the choice of camera, lens, plates, etc.

**Holborn.**—May 6th, Mr. Fred Brocas in the chair, Mr. A. Horsley Hinton read an interesting paper on "Motive and Method." Before taking up the paper, Mr. Hinton took the opportunity of expressing his high appreciation of the honour the Club had done him in desiring him to take the presidential chair, and, whilst thanking the members, he asked them to admit him also as a working member. With regard to the paper itself, in selecting the subject it had been his intention to endeavour not so much to teach as to offer some practical suggestions. His own photographic endeavours had but one end in view, namely, the furtherance of photography as an art, or, at least, the ascertainment of its artistic capabilities. He did not assert that photography was an art, for he had not fully convinced himself that such a statement was, as yet, justified by what they knew of its artistic possibilities. Not without hope, however, had he set himself the task of ascertaining, for himself at least, what position amongst monochromographic arts photography might yet command. In photography he found he cared little for the chemical and optical phenomena with which one is brought into contact. They were to him as the mere tools and materials of the artist, with which they had nothing to do beyond acquiring sufficient knowledge of their peculiarities to enable them to use the chemicals intelligently. He would ask them to deliberately and clearly separate the scientific interest from the artistic, making up their minds which it was that appealed most strongly to them, which it was that caused them to feel such an interest in the improvement of their photographic work, or that which awakened their admiration for the work of others, and guided them in selecting their favourite pictures on the exhibition walls, and sent them home full of great resolves for future exercise. Whichever branch of photographic work they chose, let them keep to that branch, whether it be scientific, artistic, or recreative. He wanted to draw the line firmly and definitely. From the earliest time when the possibility of employing photography as a means of artistic expression was first perceived, men of disciplined scientific mind had passed judgment upon those artistic aspirations of their colleagues which they were utterly incapable of understanding. Misunderstanding and failing to appreciate the artist's aim, they had involuntarily extolled or condemned those things which best seemed to exemplify the technicalities of their craft. So, men of different temperament, of opposite tastes and purposes had, because brought together under the one title of photographers, been disputing and disquieting each other until now, each failing to understand that his object and pursuit might have nothing to do with that of his fellows. The sooner they recognised the wide distinction, and yet admitted that there was room for both, the better would they be able to follow out their own course, and each section of photographic endeavour specialised in its proper channel would the quicker meet with the recognition which it deserved. His intention in thus insisting upon the separation of the scientific from the artistic, was because in their services in the one or the other they betrayed their initial motive. He then went on to compare the works of painters with photographs. Put the painter's representation of a landscape side by side with a photograph of the same, both being identical in every particular, and an unprejudiced observer would admit that, apart from colour, there was an undefined quality in the painter's rendering of the scene which the photograph wholly lacked. This quality appeared to be independent of the physical constituents of the scene, and it was therefore suggested that it was the expression of the ideal which the artist himself contributed. Presuming they were agreed that they were safe in emulating (he did not say imitating) the aim of the painter, they



must accept the same as their motive, and he further ventured to suggest that it was just that higher and more intelligent motive which elevated one's work to something higher artistically. Every photographer should pause before a landscape in nature, and view it, it might be, with half-closed eyes, or any way so that they could prevent their attention being carried away by individual objects, and, pausing, see if they could find some expression behind it all—some one or more of all the glad sentiments of a bright spring morning, or the gloom and solemnity of a winter's storm. Let their motive for picture-making be that the scene, apart from the interest and prettiness attached to particular objects, conveys a sentiment, a feeling, an idea which seemed to them worthy of retaining. A brief reference to *method* closed Mr. Hinton's remarks, touching mainly upon printing, which, in his opinion, was the salvation of photography. A short discussion followed.

**Ilkeston.**—This society, owing to the fatal explosion at a lantern display in the town in November last, had deferred its exhibition until Wednesday, the 4th inst., when a large audience assembled by invitation in the Town Hall. Messrs. Carl Wolff, B.Sc., and Geo. Woolliscroft, Wh. Sc., showed a number of slides made by them, comprising local and Scotch scenery, views on the Manchester Ship Canal, engineering subjects, etc., many of which were very creditable. Mr. Woolliscroft, who is the treasurer of the society, operated his oxy-hydrogen lantern, and Mr. Wolff described the slides. The audience were very appreciative. A collection was taken at the close for the Cottage Hospital.

**Lewisham.**—May 6th, Mr. Alf. H. Miles (Vice-President) in the chair. Messrs. R. and J. Beck sent one of their new "Frena" hand-cameras, which is a decided novelty. It is made to contain forty cut films  $3\frac{1}{2}$  by  $3\frac{1}{4}$ , which are automatically changed, and an automatic swing-back. Messrs. G. Houghton and Son sent a "Shuttle" hand-camera, which is a very ingenious piece of mechanism. It is made to contain twelve or more plates or films in sheaths, which are changed by pulling a rod as far as it will go, and pushing it right back again, bringing a plate from the back to the front, at the same time setting the shutter, and yet the camera is only an inch wider each way than the plate, the length being regulated according to the number of plates. Messrs. Marion sent a "Radial," which is too well known to need describing. Three new members were elected, and the meeting of May 20th made special for alteration of rules.

**Lewes.**—At a meeting held on the 3rd inst. a paper was read by a member of the society on "Retouching and the Artistic Improvement of Landscape Negatives." The paper, which was practically demonstrated, proved most interesting, and was voted one of the most practical that have been read before the society. At the close some stereoscopic views by Messrs. Underwood were shown and much admired by those present.

**Moston (Manchester).**—On Saturday last, May 7th, the members of the Simpson Memorial Photographic Society held the first ramble of the season, the scene of action being the old-fashioned Cheshire village Prestbury. The weather was all that could be desired, and a good afternoon's work was done. The old church, which dates from 1220, the old carved Norman doorway, black and white clergy house, ivy-clad cottage at rear of church, views in the meadows, and the irregular village street, with its rows of lime trees on one side and its quaintly-gabled houses on the other, providing excellent scope for good pictures. After tea it was found that twelve members were present with eleven cameras, and seventy-eight exposures were made. Rambles are arranged during the season to the following places:—Alderley, Turton Towers and The Jumbles, Gawsorth, Irwell Valley, Alport, Romily and Marple, and Fairbottom.

**North London.**—On 3rd inst., Mr. J. Traill Taylor in the chair, the evening was occupied as a special lantern night, to which ladies were invited, and attended in almost as large number as the members. The various slides were shown by Mr. B. J. Grover, who kindly lent his exceptionally fine lantern for the purpose, and the series consisted of the set of Indian and colonial slides, now being circulated by the Photographic Society of Great Britain under the affiliation rules, followed by a selection of slides contributed by Messrs. Grover, Rev. E. Healy, Douglas, Groundwater, Spiller, and Walker, and a number of slides of the Terraces in New Zealand, lent by Mr. Oakley. The slides gave great satisfaction. The next meeting, on 17th inst., will be a technical meeting, at which the question of "Films v. Glass Plates," will be discussed. Visitors are invited.

**Richmond.**—Friday, the 6th, was an extra lantern night. Slides were shown by Messrs. Kelsey (chiefly boat-race shots), Davis, and Ardaseer, and a fine selection of professionals' slides, lent by Messrs. Dick, Hunter, and Alabaster.

**Rotherham.**—Tuesday, 3rd inst., monthly meeting, Dr. Baldwin (President) in the chair. Fairly good attendance of members. Hand-cameras and hand-camera work were discussed, a short paper on the subject being given by Hon. Secretary. It was contended that something more than mere records could be obtained by an intelligent use of the hand instrument, proof being forthcoming in

the work of Mr. Dresser and others that picture making came within its scope. Hand-cameras of members were shown, and some prize competition prints, kindly lent for the occasion, were criticised. An excursion was arranged for the 28th inst.

**Sheffield.**—The ordinary meeting was held on 3rd inst., Mr. B. J. Taylor in the chair. After the usual routine business of the meeting and the election of a new member, the President gave a practical demonstration—subject, the new Ilford printing-out paper—in a very lucid and interesting manner, which called forth a very animated discussion, and it was generally acknowledged by the members present to be superior to ordinary albumenised paper.

**South London.**—Ordinary meeting 2nd inst., Mr. H. G. Banks, Vice-President, in the chair. The Autotype Company's representatives, Messrs. Brown and Burton attended to demonstrate the working of the Carbon process. After giving a short history of the process, they explained the means by which the tissues and temporary supports were prepared, and the method of printing. They proceeded to demonstrate the development of a large number of prints in various colours, both on single and double transfer tissue. The means by which prints were completed were then dealt with. A large number of finished prints and transparencies were exhibited in the room. There was a large attendance of members (50), many of whom showed themselves to be very much interested in the working of the process, and seemed very much surprised at the simplicity and ease by which good results could be obtained by it. It was announced that Mr. Kirby had contributed a number of scarce photographic works to the Club library.

**Southport Social Photographic Club.**—The usual monthly social was held on 4th inst., when the competition for the best set of six cloud and marine views was decided. The prize, which is presented by Mr. Cross, was won by Mr. Dickinson, who sent in a much admired set. The prize for next June will be for the best six views of the exterior of churches and chapels in Southport and neighbourhood, when it is hoped a large number will compete. At the Committee meeting held previous to the social, a letter was read from Mr. Cartmel announcing his resignation, owing to his leaving the town and neighbourhood, as Secretary and Treasurer, an office which he has most ably filled since the formation of the club, and which was received with very great regret; and at the request of the Committee Mr. J. R. Cave, of Nevill Street, consented to undertake the duties.

**Tunbridge Wells.**—The meeting was held on the 5th inst., the President in the chair. After correspondence had been read, the death of Mr. D. Howard, one of the Vice-Presidents, was alluded to with much regret, he having been much respected for his kindness and geniality. The President proposed that the Hon. Secretary do convey to the family the sincere sympathy of the members in their bereavement. Pamphlets from the London Stereoscopic Co. on lenses and hand-cameras were distributed, and a sample of the London Rubber Co.'s waterproof focussing cloth was shown, and one of Adams's lightning tripods was brought by Mr. Cassingham. Suggestions were made for excursions, after which the Seascape and River Scenery Competition prints kindly sent down by the AMATEUR PHOTOGRAPHER were inspected and criticised, the variety of the colours of the different printing processes being much discussed.

**West Surrey.**—The fortnightly meeting was held on the 4th inst., when Mr. G. Davison demonstrated and lectured on the new cold-bath platinotype paper, and Mr. E. Humphrey demonstrated the working of his new oxy-magnesium lamp. Briefly the principle of this lamp may be said to be the forcing of magnesium by means of hydrogen gas through a circular and central flame of oxygen and hydrogen. That is to say, there is a small flame of oxygen in the centre of the lamp, round which, at a certain distance away, burns another circle of oxygen. Between this circle and the central flame the hydrogen is made to force up the magnesium powder at any rate of speed desirable, thus perfect combustion is ensured. The new cold-bath platinotype paper (which is now on the market), in manipulation does not differ from the old cold-bath paper except in the solution used for development; the developer in this case being a saturated solution of oxalate of potash. Summing up perhaps the most interesting lecture in photography that has been delivered in South London, we may say, the printing of the new paper is carried a little further than formerly if the print be judged by the eye, but the time occupied will be found to be about the same. The paper has all the advantages of the old cold-bath paper without its disadvantages. The deposit being more on the surface is consequently brighter; it is finer, and therefore the blacks are richer than in the hot-bath process. It will be remembered the old cold-bath process gave these advantages. Again, the development is a fairly gradual one, the image growing for some considerable time while it is possible to stop it at any period by the usual hydrochloric acid bath. The solution for development (a simple solution of oxalate of potash, the strength of which is not really material if it be kept somewhere near the point of saturation) may be used cold or warm; in the latter



case a very slight warming of the tone results. This may also be produced by an addition of mercuric chloride, or mercuric chloride and uranium, to the developing bath. The negatives may be slightly flatter than for the older processes. The lecturer went through numerous experiments to illustrate the effect of alterations in the development, and finally exposed several pieces of the paper to the light of Mr. Humphrey's lamp for three or four seconds, developing them immediately afterwards, showing perhaps what will be appreciated by amateurs more than anything, that daylight is not now necessary for platinotype printing. The Society will be represented at the Photographic Convention by its three Vice-Presidents, Mr. Davison (President of the Convention), Mr. Lyell, and Mr. Winsford. Five new members were elected and several nominations were received.

### SOCIETIES' FIXTURES.

May 12.—LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.  
—Members' open night.

- „ 12.—HACKNEY.—Annual Meeting.
- „ 12.—BIRKENHEAD.—Ordinary meeting at Y. M. C. A. Rooms, Grange Road, 7.30 p.m.; Council meeting, 7 p.m.
- „ 13.—WEST LONDON.—Annual Dinner.
- „ 13.—LEEDS (Y.M.C.A.)—"Bromide Printing."
- „ 13.—HOLBORN.—Discussion continued on "Expos ure."
- „ 14.—HOLBORN.—Official Outing to Epping Forest; meet at Chingford Station at 3 p.m.
- „ 14.—PAISLEY.—Excursion to Calder Glen; train to Lockwinnock; Gilmour Street, 1.35.
- „ 16.—LEEDS.—Demonstration on "Ilford P.O.P." by Mr. W. Howson.
- „ 16.—SOUTH LONDON.—"Stereoscopic Photography," by W. I. Chadwick, Manchester.
- „ 17.—BRIXTON AND CLAPHAM.—"Photo-Micrography," by Dr. G. Charters-White.
- „ 18.—PHOTOGRAPHIC CLUB.—Riversea Negatives.
- „ 19.—LONDON AND PROVINCIAL.—Monthly lantern night; last of the season.
- „ 19.—LIVERPOOL (Camera Club).—Excursion to Whydial; leader, A. C. Yule.
- „ 20.—CROYDON.
- „ 20.—LEWISHAM HIGH ROAD (Camera Club).—Demonstration on "Toning Ilford P.O.P." by Mr. E. Eastwood.
- „ 20.—HOLBORN.—Discussion.
- „ 21.—SOUTH LONDON.—Excursion to High Beach.
- „ 21.—WEST SURREY.—Outing to Mersham.
- „ 21.—ACCRINGTON.—Outing to Chatburn, for Downham and District.

**Hexham.**—Under the auspices of this society a public lantern exhibition was given in the Temperance Hall on the 28th ult. The *Photography* 1891 slides were shown, and the following members exhibited slides of their own production:—Rev. C. Taylor (Prudhoe), Messrs. Jasper Gibson, Milburn, Crozier, J. P. Edwards, T. H. McAllan, and the Hon. Secretary. The members' slides showed were considerable improvement since the last lantern evening, and were well received by the audience. The lime-light lantern was very ably managed by Mr. E. Ghee (Cullercoats), while the slides were commented upon by Mr. J. Pattison Gibson in a very interesting manner.

**Kensington and Bayswater.**—A meeting was held on the 9th inst. Mr. Frogbrook took the chair, and there were twenty-three other gentlemen present. Five questions from the question-box were read and discussed; two of these seemed to give some difficulty in answering, they were as follows:—1. I have found fifteen seconds at one foot from a certain light to be the correct exposure for making a lantern slide by contact from a certain negative; what will be the correct exposure for making a lantern slide by reduction, using the same negative and light, the stop used being  $f/16$ , the negative being placed three feet from the lantern plate? 2. The above gas-light exposure being known for contact work, can the correct exposure for daylight be calculated in any way from it? Mr. Jones gave a demonstration on "Photo-Micrography," showing some excellent microscopic slides and the lantern transparencies produced from them. He also showed with his instruments the best way of fixing the microscope and camera together.

## City and Guilds of London Institute Technological Examination.

### 15—PHOTOGRAPHY.

The following were the questions set at the above examination on the 4th inst:—

#### INSTRUCTIONS.

Candidates are required to pass both in the written and practical parts of the examination.

The candidate must confine himself to one grade only, the ordinary or honours, and must state at the top of his paper of answers which grade he has selected. He must not answer questions in more than one grade.

If he has already passed in this subject, in the first class of the ordinary grade, he must select his questions from those of the honours grade.

The number of the question must be placed before the answer in the worked paper.

Three hours allowed for this paper.

The maximum number of marks obtainable is affixed to each question.

#### ORDINARY GRADE.

(Seven questions only to be answered.)

1. With a certain lens, when using a stop half inch diameter, an exposure of ten seconds is required. What exposure would be required when the stop was reduced to one-eighth inch diameter? (Twenty-five marks.)
2. What is the use of the swing-back in a camera? (Thirty-five marks.)
3. Describe how you would mount a proof printed on a gelatine surfaced paper? (Thirty marks.)
4. Describe the process of fixing a print, stating how you would ascertain whether it was complete? (Twenty-five marks.)
5. What colours should you use in "spotting" a silver print, and a platinotype print? (Thirty marks.)
6. Describe the preparation of the silver bath for the wet process, showing how you would test it? (Thirty-five marks.)
7. Give your idea of suitable backgrounds for a portrait which has to be vignettied, and for a "cabinet standing figure?" (Forty marks.)
8. How should you reduce in density small portions of a gelatine negative? (Twenty-five marks.)
9. How should you test the light of your dark-room? (Forty marks.)
10. Give a description of a retouching desk, and what position you would give it in the retouching room? (Thirty marks.)

The practical part of the examination will be held on Saturday, May 7th.

#### (HONOURS GRADE.)

(Six questions only to be answered.)

1. Describe in detail the platinotype process (cold development). (Forty marks.)
2. What is the equivalent focus of a lens, and how should you find it? (Twenty-five marks.)
3. Describe the "waxed paper" process? (Forty marks.)
4. Draw the curve of sensitiveness to the spectrum of (1), an ordinary bromide gelatine plate; (2), the same when coloured with erythrosin? (Fifty marks.)
5. Describe the production of an enlarged print on bromide paper from a quarter-plato negative of six times the size? (Forty marks.)
6. How has the electric (arc) light been applied to portraiture? (Thirty-five marks.)
7. Describe direct printing of an enlargement in the solar camera? (Forty marks.)
8. What are the relative advantages and disadvantages of celluloid films compared with glass? (Twenty-five marks.)
9. A painted window in a church has to be photographed so as to show fairly correctly the relative values of the coloured glasses (which include red); how should you proceed? (Fifty marks.)
10. For what purposes can the electric spark be used as a source of light in photography, and how are they carried out? (Fifty marks.)



**New Mode of Producing Coloured Photographs.**—This is a process by James W. McDonough, of Chicago, Ill., who describes it as follows:—I take a support of plain glass, celluloid, paper, or other suitable substance, upon the surface of which is a sensitive photographic coating, preferably forming what is known as an "orthochromatic dry plate." This may be rendered tacky by immersion in water or diluted glycerine. If preferred, however, the plate may be used before it becomes quite dry in the course of its manufacture. I dust the plate, either while it is somewhat moist in the course of its manufacture or after it has become tacky, as above explained, with a mixture of colours composed of fine or powdered particles containing the colours desired. I thus obtain a coloured surface composed of particles lying side by side which have the properties of stippled colours instead of the properties of a true mixture of pigments. In order to get these coloured particles, I use coloured powdered glass, transparent pigments, gelatine, resin, shellac, or similar substances stained by aniline dyes, etc. In the preparation of the colours by means of shellac I take a sufficient quantity of clean white shellac dissolved in alcohol, to which I add aniline colours—say for one lot red and yellow colours—in such proportions that the result will be a red, which when viewed by transmitted light in layers will cut off or absorb as much green, blue, violet, and yellow as possible, or which, in other words, will transmit as far as possible a pure red. Another lot is coloured with as pure a green as may be formed by mixtures, adding yellow to absorb blue. Another lot is coloured blue. As the mixture of colours formed in this way by red and green does not form a bright yellow, I may use in addition another lot coloured as near the yellow of the spectrum as possible. These lots, after being thus coloured, are allowed to dry, forming coloured masses, which are then reduced to powder by grinding, sifting, etc. If now proper proportions of red and green are mixed, a nearly black or gray mass will be formed, and if proper proportions of red, green, yellow, and blue are mixed, a mass will be formed that is nearly black or gray; but if this same mixture is dusted or finely spread upon the prepared sensitive surface, it will reflect or transmit a mixture of all these colours, which will be white in proportion to the purity of colour, cleanliness of mixture, and quantity of light transmitted or reflected. The glycerine may be washed out, so that only the coloured particles in the mass in which they are arranged remain. When viewed under the microscope, the white surface is seen to be composed of a multitude of different

coloured particles lying side by side and separated by small distances. This surface may be flowed with a thin coat of gelatine, which will penetrate the spaces between the coloured particles, or the ground and coloured particles may be coated with gelatine before applying them to the tacky surface by mixing them with a small quantity of dissolved gelatine and regrading them, according as a matt or smooth surface is required. The process of producing the effect called "colour," about described, is by absorption of light; but inasmuch as colour effects may also be produced by refraction, dispersion, or diffraction of light, I do not mean to limit myself to absorption only as the means of producing them. The photographic plate thus obtained, consisting of coloured particles applied to its sensitive surface, may be exposed to the action of the light from the object to be photographed through a camera in such manner that this light will pass through the coloured particles and affect the sensitive film, thus producing a latent image of the object. The plate may then be developed by the use of the so-called "alkaline pyro developer," so that the coloured particles will adhere to the surface, which is penetrated by the same coloured light as the particles themselves, because gelatine is rendered insoluble in proximity to the silver particles in the sensitive compound where acted upon by light. Thus particles which do not allow the passage of coloured rays on account of absorption may be washed off, because as to such particles the gelatine remains soluble. Thus blue rays will cause blue particles to remain as an image, white light all the coloured particles in that space acted upon by white light, and all will be removed where black occurs, which does not act upon the photographic film. After the development, the picture may be treated with thiosulphate of soda to remove the sensitive compound not acted on by the light and developer. By thus developing the plate a picture is produced composed of the particles of silver and the coloured particles remaining on the plate after the development. This picture may be used as a negative or backed with a black or other coloured surface, as in an ambrotype. The coloured image is formed by the reflection of light from the particles or through the particles, from the silver image or by the transmission of light through them when not cut off by the image. The use of the orthochromatic sensitive plates and coloured screens before the camera for the purpose of sifting light and regulating the action of different colours upon the film is too well known to require explanation. I will merely add that the particles are dusted, spread, or placed upon the plate in such proportions as to produce a white or transparent surface.

## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

## QUERIES.

5669. **Hand-Camera.**—Can any one who has used the new "Adams" hand camera, tell me how it compares with Beck's £12 12s. one, or any other of the first-class cameras in the market, for convenience, portability, and good work; also what its disadvantages are, if it has any? I shall be very grateful for any information.—CAUTION.

5670. **Walking Tour.**—Would some one kindly give me any particulars as to the best route for a walking tour of about ten days or a fortnight in North Devon; also average cost per diem for food and lodgings? The route with the most picturesque views for a 7½ by 5 camera would be desired.—N. M. H.

5671. **Derby and Wales.**—Would any reader oblige with names of best places to visit in Derbyshire whilst on a fortnight's holiday; also best place in Wales for about three days?—BYDER.

5672. **Shew's Guinea Hand Camera.**—Will any reader who has used the above inform me if it is a reliable instrument, and can it be used on a stand?—RIDLEY.

5673. **Choroscope Lens.**—Will any reader tell me the value of the stops of this lens?—RIDLEY.

5674. **Hand Camera.**—Will any reader who has used Talbot and Eamer's new Guinea hand-camera kindly say whether the negatives it produces are of such a quality as to admit of good lantern slides being made from them?—D. STOBIE.

5675. **Exposure.**—What exposure ought I to give for the following subject? A cricket XI.; background, light-painted pavilion; date, June 6th, about 2 p.m.; light, bright, but sun behind cloud if possible; plate, Ilford ordinary; lens, Lancaster's half-plate Instanto, single stop, f/22? Any hints will oblige also as to getting density in development with hydroquinone.

5676. **Exposure Meter.**—In the instructions for the Watkins meter S. 100 is given as the standard number which is said to be used four times out of five. Will some user kindly inform me if this works, as with the speed of plates given I find considerable over-exposure result?—BLANCHÉ.

5677. **Hand-Cameras.**—Can any reader recommend a good hand-camera for one or two guineas, to hold twelve quarter-plates?—DETECTIVE.

5678. **Somerset.**—Can any kind reader tell me what places are worth visiting (photographically) round about Somerset, and shall I have to get permission to photograph the interior of Tintern Abbey?—A. P. S.

## QUERIES UNANSWERED.

April 1.—Nos. 5555, 5568, 5570, 5574, 5577, 5578.  
 " 8.—Nos. 5588, 5593, 5603, 5605, 5607, 5621.  
 " 15.—Nos. 5625, 5628, 5629.  
 " 22.—Nos. 5641.  
 " 29.—Nos. 5642, 5646, 5653.  
 May 6.—Nos. 5660, 5662.

## ANSWERS.

5647. **P. O. P. Toning.**—I have just been using Ilford P. O. paper, and find that one grain of chloride of gold tones fully ten average half-plate prints.—A. W. COOK.

5650. **Pinholes.**—If "Manfield" will put the Ilford plates straight into developing solution without any previous washing, I do not think he (or she) will be troubled with pinholes.—EXPERIENTIA DOCET.

5651. **Walking Tour.**—Replying to "Iris," so far as my knowledge goes, I have photographed (last year) in Munich, Innsbruck, and Nuremberg without any interference from anybody. I am almost certain the same might be said of Cologne and Salzburg, but different conditions might obtain in Vienna. The main thing is to avoid fortresses, no matter how distant, or how unimportant a portion of the picture they make. When at Innsbruck "Iris" ought to try and obtain permission to photograph the tomb of King Maximilian. I think a "silver key" would work the oracle there as elsewhere.—GREENWOOD.

5651. **Walking Tour.**—I beg to say I have within the two last years photographed at Nuremberg, Munich, Vienna, and Innsbruck without let or hindrance. Also at Graz and Venice. A wide berth must be given with the camera to fortifications, where they exist, or the results will be unpleasant to the photographer.—F. E. CURREY.

5652. **Lake District.**—I think "Anxious" will like Windermere for taking photographs. He could make it his head-quarters, and go from there to Conistone, Keswick, Rydal, and Grasmere. Is in walking distance—the former, two miles from Ambleside, the latter four miles; or he could go by bus—the fare is 1s., I think. "Anxious" will get some pretty views at Windermere by staying at Ambleside. There is a very nice old mill which will make a very nice picture; also the church and Stock Gill Falls. Also at Newby Bridge you can get some nice views, and Brathay Bridge. There are several hotels and boarding-houses in Ambleside and Besses, but I cannot tell their charges. "The Doves" is a nice little hotel in Ambleside.—H. B. SMITH.

5652. **Lake District.**—If "Anxious" wishes to get as representative a collection of views as possible, his best plan would be to make head-quarters at two or three different places for some days each, and to work round each of these. If he is not already acquainted with the district, and has, say, a fortnight at his disposal, I would suggest making head-quarters at Grasmere or Ambleside, and Keswick. Charges would be from 6s. to 8s. per day at either place. If "Anxious" cares to communicate with me I shall be happy to give suggestions more fully than space here would allow.—P. H. COVENTRY, Birkdale, Southport.

5652. **Lake District.**—When "Anxious" gets tired of the region suggested by your correspondent in last week's **AMATEUR PHOTOGRAPHER**, I would suggest his trying the environs of Ambleside, when he will find no lack of comfortable quarters. The River Rothay



from Rydal to Ambleside is full of charming bits, and the like may be said of the Brathay—to mention only two out of many localities, which can be readily reached from Ambleside.—GREENWOOD.

5661. **Isle of Man.**—If "Novocastriensis" will call or write to Messrs. W. Harrison and Co., photographic dealers, 8, Walpole Avenue, Douglas, he will get information as to best places to visit, time to take them, etc., gratis. You cannot get better lodgings than at Harrison's, Victoria House, in connection with the above. Dark-rooms and every convenience free to visitors.—TOURIST.

5663. **Lens.**—The stop numbers of the iris of Lancaester's Instantograph lens are not exact, and you will have to measure them yourself.—NOXALL.

5664. **Thomas' Plates.**—The Cyclist plates are nearly twice as fast as the extra rapid. They are easy to handle, and give plenty of density.—NOXALL.

5665. **Weights.**—In photography, both systems of weights are used, and Mr. T. J. Holland may take it as an absolute rule that when solids are quoted in quantities of 1 oz. and upwards, the avoirdupois weight is intended, and when drachms are given, the apothecary weight is meant, the former containing 437½ gr. per oz., and the latter 480 gr. per oz. Liquids are always measured by the fluid oz., 1-20th imperial pint, but in purchasing liquids they are weighed by the avoirdupois weight, when weight is given; but above rule as to solids may be relied on both as to buying and making up formulae, etc., etc. A much more convenient way is to specify all solids in grains, and liquids by measure.—M. N. S.

5666. **Keeping Bath.**—The toning bath published by Iford Company keeps fairly well by adding gold previous to each toning, but by so doing you will eventually alter the combination of the bath owing to absorption of the sulpho-cyanide in toning, which is difficult to estimate. I find the one-solution toning and fixing, made by Fallowfield, answer admirably for the Iford paper, and keeps well. It seems rich in gold, and well charged with chloride of silver, and tones a large number of sheets without any appreciable evidence of exhaustion.—M. N. S.

5667. **London Parks.**—Your information is wrong. Apply to W. H. Primrose, Secretary to H. M. Office of Works, and a permit to photograph in the parks will be promptly forwarded to you.—NOXALL.

5668. **Ifracombe and Tenby.**—There is a most convenient and comfortable dark-room at Mr. Catford's, High Street, Ifracombe, specially fitted for amateurs. The charge is very moderate; as far as I remember, last year it was 1s. per week, including use of dishes, water, and all necessary appliances. There are other dark-rooms, but the above is the best.—AMATEUR.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED. AM. PHOT.

R. TEGLIO (Genoa).—You want almost an impossibility, viz., large apertures and microscopical sharpness; but either Taylor, Taylor and Hobson, Crouch, Perken, Son and Rayment, or Wray could supply stereo lenses to work at f/8 to cover sharply.

E. BUCK.—We should certainly advise you to have as much glass as possible. It is true that you may not always want to use the whole, but it is of great advantage to be able to do so if required. We should prefer to have the end of the room where the sitter is to be placed say 8 ft. unglazed, and 4 ft. for the camera end.

ANXIOUS ENQUIRER.—Thoroughly clean the back and edges of the plate. Place the broken negative on a levelling stand, and cover with as much thick collodion as possible made by dissolving

Pyroxyline . . . . . 7 gr.  
In methylated ether . . . . . ½ oz.  
Rectified spirit . . . . . ½ oz.

Four the collodion in a pool on to the centre of the plate, and allow it to find its own way to the edges; if necessary, coaxing any little stubborn part with a camel's hair brush wet with the collodion. Allow to set for at least an hour, then place in water till it looks no longer greasy. Place in a dish containing hydrofluoric acid 1 part, water 20 parts, and allow to remain till the corners can be lifted up, then rinse once, and put into a dish of clean water, and gently coax the film up from the glass when free, slide underneath a sheet of glass a size larger coated with gelatine 1 oz., water 20 oz., chrome alum 5 gr., which has been allowed to dry. Raise the film and glass carefully from the water, place a sheet of tracing cloth over it, and squeeze gently but firmly. Then immerse in spirit for two or three minutes and set up to dry. If you do not mind a little enlargement of the film, obtain a bottle of Cresco Fylma, Hill Bros., Victoria Road, Surbiton, and strip the film by this means, which obviates the collodionising and coating plate, but gives a certain degree of enlargement. Anyhow, practise on a useless negative or two.

J. H. BULLOCK.—(1) Willis and Co. (2) You are using too rapid plates; try a slower variety, like Imperial, Fry, Paget, Verel, or Marion's landscape, 3.4 oz. to pint is right.

SHAMROCK.—Pack the plates with Wheeler's protecting masks between, wrap in non-actinic paper, and put back in original boxes, and then stick these down with-stamp paper.

H. ROWLAND.—Your letter is too palpably an advertisement.

H. B. HOLBROOKE.—We can only suggest that there was some sulphur present somehow, and this acted on the silver. It might also happen from some complex organic acid formed by the burning wax acting on the silver. We cannot see how it is connected with photography. Was it a silver or electro-plated spoon? If the latter, you have to take other metals into consideration.

M. S. DAVID.—Accidentally omitted. A very good and clever study, but not artistic.

P. E. LYNE.—Depth of focus is dependent on focus and ratio aperture; the shorter the focus, and the smaller the stop the greater the depth. You will get no greater depth of focus with an R.R. of same focus as your Euryscope when stepped down to same aperture.

F. BULLEN.—Over-toned and shows signs of yellow spots due to imperfect fixing or bad mounts; decidedly not artistic. Church should have been taken the other way of plate, more sharply focussed; the leaves on left want painting out, over-toned.

CAUTIONS.—Size has nothing whatever to do with the awarding of medals. Every print is examined by the judges. Probably the reason of larger sizes winning is that good workers generally use larger plates, not being satisfied with small plates. We should recommend you to use Edwards's Isochromatic instantaneous for your work.

A. E. FAITHFULL.—Eastman's new rapid bromide paper would be the best.

SEARCHER.—The rule is, divide the focus by diameter of stop, in your case  $4 \div \frac{1}{8} = 32$ ,  $4 \div \frac{1}{16} = 64$ ,  $4 \div \frac{1}{32} = 128$ ,  $4 \div \frac{1}{64} = 256$ . The value of your stops are f/8, f/10.6, f/12.8, f/16. Are you sure you have the focal length right? Special Number will be issued probably next month.

JOE.—Platt and Witte, Birkbeck Works, Ridley Road, Dalston, London.

IRIS.—After squeezing the prints down to glass leave them till dry, then strip and mount, do not wet them again. Colza oil is the best oil. Many thanks for good wishes.

H. A. C.—Probably you did not clean the glass well, or did not use enough French chalk or wax solution. Write again, and let us know exactly how you worked.

J. B.—You certainly could not have a better series of lenses than those you have chosen. With regard to the weight, this is in the brass, not the glass. Practically the weight of the glass is of no moment. We have seen some of the Zeiss mounted in aluminium and the weight is nominal. The new lenses are certainly an advance. By all means keep the single lenses. We have had some prisms of the new (?) glass over two years in constant use, and there is no sign of opalescence. Some of the glasses are liable to it, but these are not much used, and when they are, are always enclosed between two harder glasses. It would be advisable to paint the inside of your zinc cover with enamel. Plates developed with hydroquinone and eikonogen may be fixed in the same bath, but it is not wise to fix pyro-developed plates before the others, or else you will get stains. The action of the theonine is to prevent the bath from getting discoloured. If you obtain some fluffless blotting-paper from Geo. Wheeler and Co., 46, King Street, Manchester, you will get over your trouble. We always use it, and find negatives dry very much quicker.

WISEACRE.—One of the most successful we have used is—

|                 |         |         |
|-----------------|---------|---------|
| Eikonogen       | .. .. . | 5 parts |
| Sodium sulphite | .. .. . | 10 "    |
| Distilled water | .. .. . | 200 "   |

B.

|                 |         |         |
|-----------------|---------|---------|
| Caustic potash  | .. .. . | 5 parts |
| Distilled water | .. .. . | 100 "   |

Dissolve the sulphite in water, add the eikonogen. For over-exposure, add a few drops of 10 per cent. solution of bromide of potassium to 3 parts A and 1 part B—for normal exposure use 2 parts A, 1 part B; for under-exposure, 2 parts A, 1 part B, and 1 part water, and give it time. Use the acid fixing-bath, and carry development a good deal further than is usual with pyro.

E. S. MIDDLEY.—S. T. Matthews and Co., 8, John Bright Street, Birmingham. Sulpho-cyanides are very poisonous, any acid setting free cyanogen, therefore it would rank next to hydrocyanic acid and equal to cyanide of potash.

J. E. T.—The pin-holes are not always caused by dust, very often they do not make their appearance unless ammonia is used. It is a little doubtful what causes them. Sepia and Indian ink answer perfectly when mixed with gum water. One of the best varnishes is made by dissolving a waste piece of celluloid in wood naphtha, about 5 gr. to the oz., and flowing this over the film. Mawson's have a special film varnish, we think.

G. H.—"Carefully remove the daguerrotype from

its frame, and separate from its covering glass, and place face upwards in a dish of cold water. Be extremely careful not to touch the front of the plate, as the slightest touch will leave a permanent mark. Lift the plate by the corners, and remove the paper from the back when sufficiently soaked; rinse the plate thoroughly, and should the water be repelled, as though the plate were greasy, flow over a little methylated spirit. If the tarnish on the edges be blue in colour, immersion in an ordinary fixing bath will remove the same; but if any bronzing is visible, make a solution of cyanide of potassium 10 gr. to the oz., and keep pouring this on and off till all tarnish is removed. Wash the plate thoroughly to free from cyanide, and rinse well with distilled water; then take hold of one corner of the plate with a pair of pliers, and dry evenly from a top corner downwards over a spirit lamp or bunsen burner. If any stain or deposit is left by unequal drying, the plate must be again rinsed with distilled water, and dried in the same way. The chief point is not to touch the plate with anything but the liquids, or a mark will be made which nothing will eradicate" (Wall's "Dictionary of Photography.")

BERNARD LINTOTT.—There is no book published on photographing in Switzerland. Articles, etc., appeared in our issues of March 9 and 16, 1889, April 3, 1890, June 27, 1890, August 20, 1890, July 18, 1891.

BLANCHE.—Send us up a print to see stains.

SESNEL.—You would find full practical directions on lens testing in "Photographic Procedure," October 23 and 30, 1891. We cannot do more than suggest your carefully reading through these articles.

ANXIOUS ONE.—Block out window. (1) Place the ether as shown near 2, and draw a thin muslin blind over 3; this will subdue the light and let you light up the shadow side of face.

H. PRESS.—One print only may be entered in each class. The exposure is exactly the same with any number of lenses, provided they work at the same ratio aperture.

ASHTON.—We shall commence next week a series of articles on making a hand camera with a swing-back.

O. I. C.—(1) You cannot do better than use A. (2) Imperial, extreme rapidity, Marion's, Fry's, Edwards's, or Wratten's. (3) Yes. (4) Dale's, The Arcade, E. Bournemouth, is the only agent, we think.

J. MCALL.—Unscrow the back combination, and use the front in its proper place. Send us up some prints that we may judge of what you are doing.

U. B. SMART.—You must join the convention, fee 5s. You will find some notes in back numbers, as to Secretary, etc.

P. C. C.—We should choose No. 3.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence.

Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m. and other communications having reference to the "Sale and Exchange" column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C.")

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 6d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Background.**—Two backgrounds for sale, mounted rollers, canvas, 8 by 8, Levey's style, 40s. the two; photographs 3 stamps by 3, Waverhill Road, Handsworth, Staffs.

**Bicycles, Tricycles, etc.**—Cushion-tyre safety for disposal, ball bearings throughout, including pedals,



beautifully nickel-plated and enamelled, perfect condition, quite good as new, would accept £7 7s. of immediate buyer, good make, rare bargain; approval.—T. E. W., 6, Tower Street, Ipswich.

**Burnisher.**—Half-plate Sutcliffe's burnisher, new, complete with lamp, 5s.—James Bullock, Penn, Wolverhampton.

**Cameras, Lenses, etc.**—Modern whole-plate square leather bellows camera, folding tail-board, reversing swing-back, three double slides, £4; Ross's 8½ by 6½ rapid symmetrical, £4 10s.; Ross's 8½ by 6½ wide-angle, £3 10s.; Grubb's cabinet lens, £5 10s.—J. Biddle, 17, Medlock Street, Manchester.

Underwood's Instanto quarter-plate camera, landscape lens, and two dark slides, 20s.—No. 288, office of this paper, 1, Creed Lane, E.C.

**Hand-Cameras, etc.**—Kodak No. 3 Junior for sale, scarcely used, new condition, portion of spool of film, price £5 17s. 6d., cost £8 7s. 6d.; case, strap, etc., complete; also pair No. 1 Ross' portable symmetrical lenses, accurately paired by Ross, never been used, price £4 15s.—Address, A. G. Rider, St. Aubin's, Livingston Road, Southampton.

Kodak, for sale. Folding Kodak, No. 5, complete, with strong folding tripod to suit, also waterproof canvas cases, with straps, for both Kodak and tripod, all new and in first-class order, cost £16. Can be seen at this office.—Address, James Keith, C.E., 57, Holborn Viaduct, London, E.C.

Kodak No. 2, almost new, complete in case, £5; also quarter-plate Shew's Eclipse camera, in good condition, £3.—Address, Maurice Yonge, 70, Kensington Gardens Square, London.

No. 4 regular Kodak, 5 by 4, equal to new, only used few times, cost £10 7s. 6d., price £8; walking-stick stand with screw for Kodak, cost £1 5s., price 15s., or both £8 10s.—A. Y.M.C.A., Plymouth.

Rouch's quarter Eureka hand-camera, detachable back, focussing screen, also solid leather sling bag and tripod for same, all in perfect working condition, cost new over £9, take 110s. the lot; approval; deposit.—Wilson, Castle Lodge, Kendal.

Presto patent hand-camera, including three extra slides, splendid condition, 12s. 6d.—Mathews, Monk Street, Derby.

Talmer hand-camera, good as new, does excellent work, cost 45s.; tripod, ball and socket, extra mahogany top for above, cost 8s. 6d.; sell 29s. the lot.—Gerry, Jeweller, Newton Abbot.

Samuel's detective camera, with shutter for time and instantaneous exposures, to hold 12 plates, 3½ in. by 2½ in., 20s.—H. Letts, Westfield, Selhurst, S.E.

Twin lens focussing hand-camera, six slides in case.—Apply, Hunt, 5, Queen's Crescent, Glasgow.

**Lenses, etc.**—Bargains! Splendid 7 by 5 R.R. lens, 16s.; half-plate camera case, leather-bound, 2s. 6d.; 14 in. pneumatic time drop shutter, 2s. 6d.; letters—Octavius Steggall, 3, Queen Square, W.C.

Lenses: Optimus rapid rectilinear, 7 by 5, splendid definition, £2; Laverne R.R. quarter-plate, £1 5s.; Darlot quarter-plate landscape, 10s.—B. Davidson, 62, Manor Road, Brockley, S.E.

Ross 8 by 5 rapid rectilinear lens, Waterhouse diaphragm, £4 5s. new.—R., 36, Franconia Road, Clapham.

**Sets.**—Lancaster's 1891 quarter-plate Instantograph lens, shutter, four Tylar's double dark slides, folding tripod, lamp, dishes, etc., 40s.; approval.—Laxton, West End House, Mortlake.

Lancaster's 1891 half-plate Instantograph camera, slide, tripod, rapid rectilinear lens, good as new, only 65s.—53, Slad Road, Stroud, [Trade.]

For sale, quarter-plate bellows camera, lens, dark slide, case, cost 35s., take 12s. 6d.—Cuthbertson, 51, Queen Street, Newton Abbot.

Lancaster's quarter camera, lens, three double slides, stand, instantaneous shutter, leather case, focussing glass and cloth, cost 46s., nearly new, take 30s.—Burgess, Pocklington School, Yorkshire.

10 by 8 Marion's square bellows 8 guinea camera, two double dark slides, two carriers, whole-plate tripod and stand, £4 10s.; 12 by 10 Bun lens, R.R., iris diaphragm fitted to same, £3; complete outfit, half-plate camera, R.R. lens, snap shutter, dishes, frames, all as new, £5 10s.; specimens of work.—Pollard, East View, Western Road, Cheltenham.

Half-plate camera, lens, stand, and double dark slide, price 16s., a bargain.—T. Key, George Street, Grantham.

Whole-plate Lancaster's Instantograph, three mahogany dark slides, rapid rectilinear lens, and tripod, in good condition, £5 10s., cost £10 10s.—H. Letts, Westfield, Selhurst, S.E.

Bargain! Underwood's Tourograph camera, half-plate, double back and stand, good condition, cash, £1 16s.—Apply, J. Clarkson, 1, Railway View, off Lytham Road, South Shore, Blackpool.

Rayment's camera, 5 by 4, four double backs, Optimus rapid rectilinear lens, 6 by 5, Kershaw's shutter, case, price £5 15s.; excellent condition; bargain.—J. W. H., 25, Clyde Road, Croydon.

Underwood's half-plate Instanto set, complete, and in perfect condition, only used twice, cost £4 4s., will sacrifice for £3; Cox's quarter-plate portrait lens, quarter-plate box camera and stand, only 25s.—Address, Photographer, 23, Nook Street, Workington.

Camera (half-plate or 7 by 5), lens, and stand wanted, cheap for cash.—P., 223, Southgate Road, N. Sands and Hunter's 5 by 4 Imperial camera, three

double backs, Wray's 5 by 4 R.R. and landscape lenses, canvas and leather case, Kershaw's shutter, all in first class condition, £8.—R., 36, Franconia Road, Clapham.

**Shutters.**—L'Automatique shutter, time and instantaneous, pneumatic release, always set, fit two in hood, 10s.—Winn, 30, Bennett's Hill, Birmingham.

**Stereoscopic Apparatus.**—Stereoscopic Company's Dispatch hand-camera, six double backs, Newman's shutter, equal new, cost £12 15s., price £7.—Bygrave, 13, Canterbury Road, Brixton, S.W.

**Sundries.**—What offers in cash for Underwood's half-plate two-fold tripod, stand, very little used, 9) half-plate mounts (gold bevelled edges), three half-plate developing trays, Lancaster's Instantograph shutter (quarter-plate), together or separate.—J. L., 27, Baring Street, South Shilde.

Two mahogany light-tight boxes, 5 by 4, with lock and key, 4s. 6d.—Jones, Wheelgate, Malton.

Bertie Park phaeton for sale, take horse 15 hands, with lamps, brake, leather apron, etc., lately done up, only £15, cost £52.—Apply, The Nook, Gipsy Hill, Norwood.

## WANTED.

**Cameras, Lenses, etc.**—Wanted, half-plate camera (Lancaster's preferred), with rapid rectilinear lens, Instanto, etc.—J. Knights, Church Street, Bocking, Essex.

**Hand-Cameras, etc.**—Wanted, 5 by 4 Rouch's Eureka hand-camera, modern pattern; send specimens and lowest price.—No. 289, office of this paper, 1, Creed Lane, E.C.

Wanted urgently, to complete outfit for Exploration Company, 18 more Facile band-cameras, with landscape lenses and finders (R.R. lenses not required), second-hand, but in good working order; state lowest price to Jonathan Fallowfield, 146, Charing Cross Road, London.

**Lenses, etc.**—Wanted, quarter-plate or 5 by 4 Ross' rapid symmetrical lens, iris diaphragm preferred.—Jackson Greaves, Strandtown, Belfast.

**Sets.**—Half-plate outfit wanted. Violin and case (value £5) offered part exchange.—Rev. A. C. Atkins, King's Langley, Herts.

Wanted, very compact quarter-plate, and quarter-plate Rover (latest).—William M'Cullough, Newtownards.

Wanted, half-plate camera, R.R. lens, pneumatic shutter, frames, dishes; state lowest price; approval; deposit.—S. P. Roskelly, Horne Street, Winslow.

**Shutter.**—Thornton-Pickard stereo shutter, time and instantaneous; estate price.—Midgley, Newbold, Chesterfield.

**Sundries.**—Wanted, two of Lancaster's half-plate Instantograph dark slides; also Thornton-Pickard time and instantaneous shutter for 2½ in. hood; must be in good condition and on approval.—Address, B. Harrop, 219, Rock Street, Pitsmoor, Sheffield.

Wanted, either Watkins' or Hurter and Driffield's actinometer.—Address, S. Armstrong, Ennisceorthy, Ireland.

**Bargains in Hand Cameras.**—Kodak No. 5 folding, for pictures 7 by 5, fitted rectilinear lens, instantaneous shutter, adjustable focus, finder for horizontal or vertical pictures, covered vertical picture, covered black leather, take £8 17s. 6d.; new spool of films fitted, bought few weeks since. Houghton's Automatic hand-camera, 12 quarter-plates in case, rapid rectilinear lens, rotating stops, two finders, as new, £4 15s. lowest; Optimus magazine, quarter-plate, for horizontal or vertical pictures, carries twenty-three plates, Optimus rapid rectilinear lenses, finest order, take £5 15s.; London Stereoscopic Company's Dispatch detective, covered black leather, fitted Stereoscopic Company's rapid rectilinear lens, Newman's shutter, two finders, three double slides, rack focussing, size quarter-plate, as new, take £6 6s., cost £10 10s.; Optimus magazine hand-camera, carries twelve quarter-plates, two finders, Optimus rapid rectilinear lens, as new, £4 15s., lowest; Griffith's hand-camera, three quarter-plate slides, good lens, etc., 17s. 6d., as new. All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Cameras! Cameras! Cameras!** Lenses! Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

**Photographic Appliances.**—Accessories and apparatus by all the following makers are always in stock; call and inspect any article you may wish to purchase, and compare with different makers' goods, and you will be able to possess the best and most suitable article for your purpose. Special large selections of Lancaster's goods, all Optimus cameras or lenses, Underwood's cameras, Fallowfield's Hand cameras,

Talmer Hand cameras, Ideal Hand cameras, etc. All makers' plates, Hford plates and papers, Paget plates, Thomas's plates, Fry's plates, Mawson's plates, silver papers, bags, cases, valves, 2-fold, 3-fold, and 4-fold stands, dishes, printing frames, etc., etc. Write for list to Manager, City Sale and Exchange, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium).

**Bargains in Cameras.**—12 by 10 Camera, all latest improvements, back extension, three double dark slides, fitted rapid rectilinear, Waterhouse stops, fine definition, and ash sliding stand, cost £18 15s., take £12 10s.; grand outfit, 10 by 8 camera, by Morley, Islington, double extension leather bellows, three double and two single slides, fitted Lancaster's lens, rotating stops, in finest order, £5 15s.; whole-plate Underwood's Instanto camera, all improvements, camera, lens, blind shutter, double slide, folding stand and case, as new, £4 17s. 6d.; Dallmeyer Stereoscopic camera, rack focussing swing back, three double and one single slides, a mastership of workmanship, fitted Ross' actinic doublet lens, rotating stops, 5½ in. focus, £7 10s., a rare bargain; half-plate finest Spanish mahogany camera, rack focussing, for wide-angle, finest leather bellows, rapid rectilinear lens, iris stops, by Mallett, three double slides and three-fold ash stand, as new, take £4 17s. 6d., worth £10 10s.; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s., worth £5; half-plate Lancaster's Instantograph, 1891, warranted as new, with all improvements, including camera, Instantograph lenses, iris stops, instantaneous shutter, double elide, and folding stand, take 72s. 6d.; half-plate set by Wynne, of Holloway, camera best leather bellows, back extension, etc., three double dark slides, rapid rectilinear lens by Wynne, iris stops and folding stand, £5 10s., cost double, warranted as new. Lancaster's stereoscopic Instantograph, as new, two double slides, 6½ by 3¼ instantograph lenses, instantaneous shutter and folding stand, take £3 17s. 6d., quarter-plate Le Meritoire set complete, camera, lens, slide and stand, 21s. lowest; also quarter-plate Instantograph set, as new, including camera, two slides, lens, shutter, folding stand, all latest improvements, 37s. 6d. lowest; 5 by 4 camera by Rouch, Spanish mahogany, reversing, fitted Riley rectilinear lens, three double slides, and folding stand, take 50s., cheap. All above warranted in every detail. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Lenses.**—For sale, 15 by 12 Optimus wide angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; Ross whole-plate actinic triplet, for large heads or groups, Waterhouse stops, take £4 15s.; whole-plate Optimus rapid rectilinear (by "Optimus") as new, guaranteed, grand definition, covers well to edges, £3 10s.; whole-plate Lancaster's Silver Ring rectilinear lens, quite new, grand definition, covers 9 by 7 well, works /10, take 60s.; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; rapid rectilinear lens by Wood, Lord Street, Liverpool, movable hood, works /8, quite new, 25s. lowest; Portrait lens, cabinet size, rack focussing, finest order, take 17s. 6d.; half-plate Landscape (by Hinton), Waterhouse stops, as new, take 15s.; 7 by 5 rapid rectilinear lens by (Wood, Lord Street, Liverpool), Waterhouse, a really good article, warranted, 30s.; half-plate Optimus rapid rectilinear, Waterhouse stops, as new, 27s. 6d.; half-plate landscape lens (by Cox, Ludgate Hill), take 12s. 6d., guaranteed; half-plate landscape and view lens (by Pettit, London), fitted iris stops, covers well, splendid definition, 15s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d. Portrait lens, by Tylar, rack focussing, Waterhouse stops, fine definition, take 15s.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse stops, cover 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**LADY MURRAY** will be pleased to send a specimen of her Sensitized Paper for trial, free and post paid, to any address in the world. It will be found to be absolutely free from all the usual faults of blistering, spots, meanness, smell, etc., to keep any length of time, to be of uniform quality, to tone and print rapidly, and to stand any climate in the world. Indispensable for India and the Colonies.—Address, "Amateur," Lady Murray, Chichester Street, London, W.

**STOCK-KEEPER WANTED.** Capable and intelligent man with first-class references; one accustomed to the handling of photographic goods preferred. Apply by letter only, stating age, experience, and salary required to R. S. T., office of this paper, 1, Creed Lane, E.C.



# The AMATEUR PHOTOGRAPHER

Telephone N<sup>o</sup> 1645      Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

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FRIDAY, MAY 20, 1892.

[PRICE TWOPENCE.

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare*.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—Postal Photographic Club—Datcher, Portarlington—Walking Tour Parties—Lincoln C. C. Exhibition—Trip to Norway.

LEADERS.—Ives's Process of Heliography—Notes on Enlarging.

LETTERS.—Stereoscopic Photography (Chadwick)—North Wales (D. S. B.)—The Blister Fiend (P., J. B. M., Edwards and Co.)—The Photographic Convention (Cembrano).

APPARATUS.—Fitch's Flat Celluloid Films—Dibdin's Exposure Table.

ARTICLES.—Photographic Procedure (Wall)—Elementary Photography (Hodges)—The Lantern, and How to Use It (Goodwin Norton)—Useful Hints on Picture-Making (C. Whiting)—Jottings on Amsterdam (Webster)—Enlargements (Agars)—Photo-Micrography—With a Camera in Spain (King).

SOCIETIES' MEETINGS.—Aberdeen—Ashton-under-Lyne—Belfast—Bolton—Croydon—Derby—Dundee and East Scotland—Durham—Eastbourne—East London—Fairfield—Hackney—Herefordshire—Hove—Rochdale and District—Staffs.—Sydenham.

AMATEUR PHOTOGRAPHER'S TOURIST INDEX.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

### TERMS OF SUBSCRIPTION—

|                        |                         |                          |
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| OUT OF POSTAL UNION .. | " " 7s. 9d.....         | " " 15s. 3d              |

TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZEL, WATSON, and VINEY, L.P., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE AND EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

### "Amateur Photographer" Monthly Competition No. 36.—

"SEA PIECES AND RIVER SCENERY." Latest day, May 30th  
—Prizes: Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, June 17th.)

A VACANCY occurs in the Postal Photographic Exchange Club—a club that not only provides for criticisms of members' work, but exchanges between all its members. Any lady or gentleman wishing to fill the vacancy can have full particulars, rules, etc., on application to the Secretary and conductor, Mr. R. W. Copeman, Kuklos Cottage, Henstridge, Blandford.

Our readers will remember that we drew their attention in our issue of April 29th, p. 335, to a rather doubtful character named Thomas Datcher, of Portarlington, who had obtained a photographic outfit through our "Sale and Exchange" columns without paying for it. The correspondent who lost his outfit now writes to inform us that by the aid of his solicitors he has regained his camera, etc., from James Faithful, of Mountmellick, who has been using Datcher's name, and receiving goods in that name, and the lawyer who called upon the said James Faithful says that he has several other kits, and if any of our readers have lost theirs through this fellow, we trust they will at once try and get them back and prosecute him. Such men as this deserve all they get, and we now distinctly warn all our readers against James Faithful, of Mountmellick, and would further try to impress upon them in every case to insist upon the deposit system which we have instituted.

In our correspondence columns we publish a letter from one of our readers who is anxious to meet a companion for a walking tour, and solicits our aid for help in that matter. We need not say that we shall be pleased to assist in any way we can, and if any number of gentlemen like to write us, we will do our best to put the matter into shape for them.

We hear that the Lincoln Camera Club, which has only been in existence a very short time, are organising an exhibition at which the whole of the prints shown at the recent exhibition of work in Brussels will be shown. The prints represent some of the foremost workers in England, and report says they are well worth seeing.

DURING the last few years Norway has become one of the happy hunting grounds for photographic tourists, and a special chance is now offered to those who wish to visit that country. The ss. *City of Richmond*, which has for some years been an Atlantic liner, will start from Liverpool on Saturday, June 4th, for a twelve days' cruise. A well-



appointed dark-room will be provided, and the same will be in the charge of a professional photographer, who will be glad to assist amateurs with advice, etc.

The boat itself is a very fine one, 445 feet long, 43 feet broad, and 4,780 tons register, and is capable of very high speed, and has smoking rooms, library, pianos, etc. It is intended that the *City of Richmond* shall be the home of the tourist during the twelve days' cruise, but while this is so, there will be provided every facility for those who wish to spend a day or two on shore. They will be able to join the vessel again according to the published itinerary. Facilities for landing and embarking will accompany the vessel and be at the disposal of the passengers. She will leave the Mersey on Saturday, June 4th, and, providing sufficient inducement offers, touch at Larne and Oban, and, time permitting, calling for a few hours' stay at the Shetland Islands. She will then proceed to Norway (a run of a few hours). Here she will visit the following places:—Naess and Molde (Romsdal Fiord); Merak and Hellysylv (Geiranger Fiord); Oie (Norange Fiord); Saebo (Hjorena Fiord); thence to Ostenvik, Fjarland, Gudvangen, Bergen, Odde, and Stavanger. Time will be allowed for passengers to see the various places; and for cariole drives in some instances from one point of interest to another where they can again join the steamer. The programme may be at any time varied at the discretion of the commander, who will study the safety, comfort and pleasure of the tourists in any deviations he may decide upon. Further sailings are intended as follows:—Leave Newcastle for Norway, June 18th; return to London, July 1st. Leave London for Norway, July 2nd; return to Newcastle, July 15th; leave Newcastle for Norway, July 16th; return to Liverpool, July 29th; leave Liverpool for Norway, July 30th, return to Newcastle, August 12th; leave Newcastle for Norway, August 13th; return to London, August 26th; leave London for Norway, August 27th; return to Newcastle, September 9th. We shall be glad to receive the names of any of our readers who may be anxious to join the boat, and the first and second cruises are the best we believe, so far as regards weather; if we receive sufficient names, it is quite possible that we may be able to arrange a special reduction to our readers, the usual fares being 12 guineas and 18 guineas, according to the position of state-room.

THE print, "A Staffordshire Lane," which gains our Silver Medal in the last competition, has, we find, been awarded a silver medal in a competition instituted by a paper called *Science and Art*, and after careful consideration we are compelled to admit, that whilst it was hardly our intention to admit such pictures, we have no rule which actually debars them, and therefore we are compelled to abide by the decision of the judges.

WE hope to be able to publish next week the awards in our Ladies' Competition and Quarterly Examination in Photography, but probably we shall not be able to utilise any of the pictures for illustration till the following week, as the preparation of the blocks will take some time. For this reason also the first of our Holiday Resorts articles is held over till next week.

#### IVES' PROCESS OF HELIOCHROMY.

At the Royal Institution on 10th inst., Mr. F. E. Ives gave the first of his lectures on his special process of heliochromy, and whilst this is the first chance we have had of seeing results of his researches in England, we need not say that it is not the first time we have heard of it, as Mr.

Ives has lectured very fully on the subject before the Franklin Institute in America. The main feature of Ives' process is that the same is based on the Young-Helmholtz theory of colour sensation, so ably worked out by Clerk-Maxwell, which contends that there are three sets of nerves in the retina, each of which is not sensitive to one particular colour only, but more or less to a very fair range of the spectrum, this being carefully plotted out by Maxwell, and on which plotted curves Mr Ives has worked. We may also point out that in the *Photographic Quarterly*, vol. i., No. 4, Mr. F. Bligh Bond enunciates the same theory.

Mr. Ives uses a specially arranged camera, the rays being reflected in part by glass plates set at the correct angle, the specially selected screens being suitably placed before the plates or mirrors. Mr. Ives has two ideas for the construction of a camera for this work. In one the negatives are all on one plate, and in the other on three plates. For pigment printing, instead of using inks corresponding in tint to the three primaries, Mr. Ives uses the complementary colours. Thus—for red, blue-green; for green, lilac; and for blue-violet, yellow.

We were unfortunately unable to be present ourselves, but our representative, who has probably done more in this country than any other man to bring to a successful result the production of heliochromic prints, has informed us that undoubtedly Ives has solved the problem.

#### NOTES ON ENLARGING.—X.

##### DRYING, MOUNTING, AND FINISHING THE PRINTS.

To dry the washed prints it is advisable to hang them over a rod or cords. They should not be dried between blotting paper. We have successfully used thin laths nailed across a room, on which the prints are laid. Artificial heat should not be used unless it is warm air.

The most usual method of mounting enlargements is on cloth or canvas, and the directions given by the Eastman Company for this purpose will be found quite satisfactory. For mounting upon cards it is best to allow the print to dry thoroughly, then place it face downwards upon a sheet of clean paper, and apply freshly made starch paste, not too stiff, with a brush, and rub into contact with a soft cloth, or use a roller squeegee. Enlargements should always be mounted behind a cut-out mount, and a small gold edging of from  $\frac{1}{4}$  to  $\frac{1}{2}$  inch or more, according to the size, adds to the appearance; and toned, grey, or buff mounts show up well.

The smoother varieties of bromide paper may be both rolled and burnished, but the rough-surface papers, which are the more artistic, should not be either rolled or burnished. For burnishing, dry Castile soap should be used, or else an alcoholic solution of soap made as follows, but care must be exercised in the use of the latter, or stains may ensue:—

Curd soap . . . . . 1 oz.

Glycerine soap . . . . .  $\frac{1}{2}$  oz.

Shave the soap finely, and rub up with a little water, and heat till dissolved, adding only as much water as is absolutely necessary to dissolve the soap. This solution is then added gradually to 32 oz. of methylated spirit, well shaken and filtered. A pad of linen or cotton wool is soaked with the solution and rubbed over the dry print, which is ready for burnishing when the alcohol has evaporated.

Retouching may be effected by means of a lead pencil, or preferably by a mixture of powdered graphite and crayon, a suitable kind of the latter being Conte-crayon No. 1, the touches being afterwards worked up with a stump. For the shadows Conte-crayon No. 3 should be used, whilst



for the high lights and half tones a harder crayon, such as No. 0 or No. 1, will be found useful. Special pencils are made for retouching bromide prints and enlargements, which will be found to answer every requirement. Small defects, such as produced by pinholes in the negative, if they occur in a high light or otherwise white place, may be eradicated by scratching out with a lancet or other sharp-pointed knife, or a needle mounted in a penholder.

Enlargements on rough-surface paper are specially suitable for colouring with pastels or crayons, water colours, and oil colours, by means of the air brush, etc.; but this department would need more space than can well be devoted to the subject. Colouring with pastels or crayons is, however, extremely easy, the rough surface of the paper taking the colour well. For water colours it is advisable to gently rub the surface of the enlargement with a pad of fine linen or cotton wool dipped in weak ammonia water, so as to make the colours take, or else diluted solution of ox-gall may be used for the same purpose if water-colours are used. The enlargement must be absolutely dry before any colour is applied, or blisters and running of the colours will ensue. For finishing in oils, the enlargement is treated as follows. We must first apologise for the rough-and-ready formula, but it was obtained from a professional colourist, who had used nothing else for over fifteen years. Obtain one pennyworth of clear size, and dissolve in a pint of warm water, and flow over the enlargement just as if one were coating a dry plate. The film must not be touched with the fingers. When quite evenly covered, set the canvas up about four feet from the fire to drain and dry, when it will be found that the oil colours will take well, and yet not sink in and stain the paper or canvas.

Mr. William Brooks, in the "Year Book of Photography," 1885, proposes the following plan for the greater preservation of enlargements:—Good white shellac is dissolved in alcohol, to which solution an equal quantity of a saturated solution of borax in water is added in small quantities and shaken. The liquid should be quite clear, or else it must be filtered, and it should remain clear when diluted with from five to ten times the quantity of water. The enlargement is laid flat on a table face upwards, and the dilute solution is sprayed evenly over the whole surface by means of a spray diffuser. When the print is entirely covered and damp, it is allowed to dry, and shows no trace of the last treatment.

#### COLLODIONISING AND WAXING BROMIDE PRINTS.

Enlargements on bromide paper may be given a slight glaze by squeegeeing the print whilst wet down to waxed plate glass or sheets of ebonite or ferrotype iron. A still higher glaze may be obtained by waxing a sheet of plate-glass, and then coating it with enamel collodion—

|                         |       |
|-------------------------|-------|
| Pyroxyline .. .. .      | 6 gr. |
| Methylated alcohol.. .. | 1 oz. |
| Ether .. .. .           | 1 „   |

As soon as the collodion has set it should be immersed in a dish of distilled water till it no longer shows a greasy appearance, and the print, previously soaked in water till limp, placed in contact with the collodionised glass under water, and both should be carefully lifted out, the print well squeegeed down till no air bubbles are visible, and then the whole set up to dry. When thoroughly dry, the edges should be cut round with a sharp knife and the print stripped. The print may also be polished with encaustic paste, which improves the appearance and detail in the shadows without conferring an inartistic gloss.

## Letters to the Editor.

### STEREOSCOPIC PHOTOGRAPHY.

SIR,—Upon looking over my article in your previous issue I can imagine a misunderstanding might arise from the last paragraph and some further remarks are necessary.

Near the centre of the retina of the human eye is a "yellow spot." When the image of a distinct object falls upon the centre of this yellow spot, a distinct impression is formed in the brain, and we see distinctly; but when an image falls upon other parts of the retina, it is conveyed to the brain in a less distinct manner, that is to say, all other parts of the retina radiating from the "yellow spot" are less sensitive, and the mind receives images from these parts in what a photographer would call out of focus. When we want to see an object, we turn our eyes in the direction of that object, and thus bring the image formed by the crystalline lens into the centre of the yellow spot, for, as has already been said, this is the only place where distinct vision is possible. It is therefore manifest that we can only see a point of an object distinctly at a time, and all other parts of the object are indistinct, or out of focus; but, by experience from very early infancy, we associate these indistinct images in a certain way, and we know what they mean. For instance, when we have learned to read by a momentary glance at a word of eight or ten letters, we know what these letters mean. If we look at the initial letter in the word "stereoscopic" first with one eye, we concentrate our attention for the time on the letter "s," and we see it, or part of it, distinctly, and the other letters will be more or less indistinct, though by practice in reading we know instantly what they mean. If now we look at the letter "s" with two eyes, each retina will receive a similar image in a similar way, and by experience the two images are combined in the brain, and we know we have only one object before us, but depending upon the distance the object be from the observer, the indistinct images (alike in both eyes) will fall upon different parts of the retina which are more or less sensitive, and by experience again we know we are looking at a flat object.

But, when we look at an object of three dimensions with two eyes (the object may be something near at hand, or it may be a landscape), we converge the optic axis to some particular point so as to bring it upon the centre of the "yellow spot" of the retina. Now, it will be seen that all other objects around the particular point are not only indistinct, but they are *not alike*, in each retina, for with one eye we see more of one side of the solid object than is visible to the other eye, and these indistinct images which are not alike do not correspond in the same way; they would if the object was flat, and by experience and association with other mental faculties we know them to be solid. When we look at a near object, the convergence of the optic axis is greater than when a more distant object is observed, and the dissimilarity of the indistinct images is more pronounced.—I am, yours, etc.,

Manchester.

W. I. CHADWICK.

\* \* \* \*

### NORTH WALES.

SIR,—I have just returned from a fortnight's holiday in one of the most lovely spots in North Wales, and it may interest some of your readers to know that I have fitted up (in a rough though useful manner) a commodious dark-room in the lodgings that I had there.

I took about forty photographs, and developed them all on the spot with scarcely any failures.

The address is, John Jones, Gwynfryn, Llanbedr, Merionethshire, and as far as I know the rooms are not taken till the end of July. If any of your readers wish for further information I shall be very happy to give it them.—Yours faithfully, D. S. B.

\* \* \* \*

### THE BLISTER FIEND.

SIR,—Having purchased a dear experience in blisters from a great portion of my silver prints, I very naturally hailed with delight the information given by "Anti-Blister" in your last issue, for the almost certain prevention of blisters on silver prints. The other day I was toning three whole-plate prints, which, when finished, showed these horrible monsters. To day, I printed and toned another three, and worked in the way "Anti-Blister" suggested, but with the same result as before. I cannot help thinking your correspondent has been working with well manufactured paper, which was the reverse when he was



troubled with the blister fiend, as I had some paper toning with the last batch of the above-mentioned prints, of a different manufacture, which shows no signs of blisters.—Yours faithfully, P.

SIR,—Having noticed in last week's *AMATEUR PHOTOGRAPHER* the letter from Mr. H. S. Large on this subject, I take the liberty of stating that if he were to try the sensitised albumenised paper manufactured by the Scottish Sensitised Paper Co., 57, Hope Street, Glasgow, using their formula for fixing and toning, he would find at last a paper absolutely free from blisters.—Yours, etc., J. B. M.

SIR,—We notice that in your last issue a correspondent has given, as a remedy for blisters, a formula for the salt and ammonia bath, which we introduced years ago, and have included in our instructions for toning XL paper ever since. This being so, we may, perhaps, be permitted to point out that we are now sensitising a special paper, with which even this simple preventive is unnecessary, as it does not blister, and so does not require any special precaution to prevent it doing so. As this matter seems to be of very general interest, we are sending with this a sheet of our paper, and think that you will find, on trial, that it not only "does not blister," but that it cannot be made to do so.—Yours, etc., B. J. EDWARDS AND CO.

[The application of salt and ammonia has certainly been in use for some considerable time, as stated above. We shall report next week on the paper after trial of the same.—EDITOR.]

\* \* \* \*

### THE PHOTOGRAPHIC CONVENTION OF THE UNITED KINGDOM.

SIR,—Pending the issue of our programme, which will be ready by the beginning of June, I ask you now to publish for the guidance of your readers who are members of the Convention, the following particulars of the excursions, dinner, group, etc. On Tuesday, July 12th, there will be an excursion to Melrose and Dryburgh; on Thursday to St. Andrews and Dunfermline; on Friday to Dalmeny and Cramond Bridge, and to Rosslyn and Hawthornden. The group will be taken on the Wednesday at noon, probably in Prince's Street Gardens. The dinner and smoking concert will be held on the Friday evening in the Waterloo Hotel. The head-quarters of the Convention at Edinburgh during the week of the meeting will be at the Royal Hotel and at the Waverley Temperance Hotel.—Yours faithfully,

F. P. C. CEMBRANO, JUN. (Hon. Sec.)

10, Cambridge Gardens, Richmond, Surrey.

### Apparatus.

#### FITCH'S FLAT CELLULOID FILMS.

MR. E. H. FITCH, of 34, Angell Road, Brixton, has submitted to us samples of his flat celluloid films, and having tried the same we can state that these are a great improvement, as they lie perfectly flat in the dark slides, and there is no buckling or cockling.

The films are prepared in two rapidities, and are as easy to work as ordinary glass plates. These flat films have been on the market for some little time and Mr. Fitch was the first to obtain a patent for the production of the same.

#### DIBDIN'S EXPOSURE TABLE.

MR. W. J. DIBDIN, of Mayfield, Grange Road, Sutton, has sent us one of his exposure cards, which is of decidedly novel construction, and upon trial of the same during a recent outing we found it a satisfactory guide to this most difficult problem. It can be obtained in a neat little case, price 1s. 3d., or without case 1s., and fits easily into one's pocket, taking up very little room.

**Birmingham.**—The first excursion of the season took place on the 7th inst. Thirty-five members and friends assembled at New Street Station, and took train to Marston Green. From thence, under the leadership of Mr. E. Howard Jaques, the party proceeded by way of Olcott Wood, Chelmsly Wood, and the River Cole, to Coleshill, where tea was provided. The walk was greatly enjoyed, the weather being charming. Upwards of 150 plates were exposed. The Council offers a prize (an enlargement) for the best picture taken on each of the excursions of the society.

## Photographic Procedure.

By E. J. WALL,

Author of the "Dictionary of Photography."

### SECTION V.

#### THE SENSITIVE MEDIUM AND ITS SUPPORT.

(Continued from page 340.)

THE necessary utensils for coating plates may be either very simple or more or less elaborate, according to the operator's ideas. The one absolute essential is a levelling stand, and if we are going to coat any quantity of plates, a good-sized sheet of plate glass, and a level. All these may be bought from any photographic dealer, or the glass alone obtained from any glass warehouse. Sheets of glass of the necessary size, we need not say, are also essential.

The glass on which the emulsion is to be spread should be well cleaned, and for this purpose tripoli made into a paste with methylated spirit may be used, or prepared chalk made into a thin cream with water. After rubbing the glass well with either, it should be rinsed in tepid water, then well rinsed again in hotter water, and given a final rinse in hot water, when it may be placed in a rack to drain, and, if thought necessary, polished with a soft wash-leather, which has been freed from grease by washing in soda.

When the glass is cleaned, each piece should be taken up by means of a pneumatic holder, which may be obtained from any photographic warehouse, and examined for flaws and large bubbles; all defective pieces being rejected. The glass should be piled together and heated by being placed in an oven or before the fire for a little time. It must not, however, be made too hot, only just pleasantly warm so as not to chill the emulsion when it is poured on. A measure may also be used by the amateur in his first trials to measure out the quantity of emulsion, but with a little practice one is soon accustomed to pouring out about the right quantity.

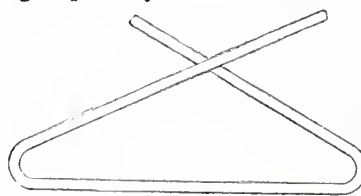


FIG. 119.

The method of coating depends upon the size of plate; with small plates—for instance, half and quarter plates—it may be poured into the middle of the plate, which is supported by the pneumatic holder, and then

the emulsion made to run to the four corners by tilting the plate as when coating a plate with collodion. This, however, is not a very easy matter, and it is far simpler to pour the emulsion in a line right across the plate, and spread by means of the simple little distributor shown in fig. 119, which is a piece of glass rod, not tubing, bent to the above shape in a bunsen flame; this is placed in hot water till quite hot, wiped dry, and then the emulsion is spread with it, the plate being on the plate of glass on the levelling stand.

Mr. W. K. Burton, in his well-known and excellent little handbook "Modern Photography," describes a different method of coating, which I have used with success, and as I have also one of the drying boxes he describes, I give the extract from the book entire.

"There are several methods of coating plates in common use. The best for those who have the skill is the method used for coating with collodion, and which we describe; but we imagine most of those who have not worked the wet process will find the plan which has been used for some time by the writer, and which is also described, the most convenient. For the ordinary method, the apparatus necessary is as follows.



"A small tea-pot. A large flat dish of the nature of a porcelain flat bath to catch spillings. A pneumatic holder; this is an india-rubber ball with sucker attached, the whole forming an apparatus whereby it is possible to pick up a plate.

"In coating by the ordinary method, it is advisable to have two ruby lamps, one placed at the back of the operating table, the other in front of the operator, and above the level of his head. He can thus see the emulsion on the plate, both by reflected and by transmitted light. The flat dish is placed between the lower light and the operator; the tea-pot full of emulsion, melted, and at a temperature of 120 deg. Fahr., or thereby, may be placed on this dish, and the plates, *polished side downwards*, are placed to the right of the flat dish.

"The pneumatic holder is taken in the left hand, which is stretched across the flat dish, to take hold of a plate. The plate is held level, and a pool of emulsion is poured on to it, and guided over it exactly as was described for varnishing a plate in Chapter XIII., page 85. The only difference is that more than half the plate is at first covered with emulsion, and that, instead of the plate being drained, it is only slightly tipped up, so as to let a little of the emulsion return to the teapot. After this is done, the plate is gently rocked for a few seconds, till we see by looking through it that the coating has spread evenly. To tell whether the plate has had enough emulsion left on it, we look through it, after it has set, at one of the ruby lights. If we can see the form of the light through the film, there is not enough emulsion on the plate.

"The plates, as they are coated, are placed on the levelling slab to set. Some emulsion is sure to be spilled into the flat dish. It is allowed to set, is then scraped up with a strip of glass, and remelted. For the method of coating which we recommend to those not skilled in the wet process, the pneumatic holder is not required. It is necessary, however, to make a small tripod. This is done by gluing three somewhat large-sized shot on to a quarter-plate in the form of a triangle, thus,—

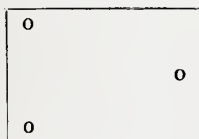


FIG. 120.

"There is also needed a glass rod about two inches longer than the width of the plate to be coated, and a jam pot or glass measure in which to stand the rod. The dark-room lamp is placed within a few inches of the left-hand end of the levelling shelf, and to the back of it. There is to the left of the lamp, room only for the pile of plates, which in this case have the polished side upwards. The rod standing in the jam pot is to the right of the lamp. The teapot with emulsion in it, as before, is in front of the lamp, and farther forward still, near the front edge of the slab, is the small tripod mentioned. A plate is taken from the pile, and placed on the tripod.

"A pool of emulsion, about half covering the plate, is poured from the teapot. The glass rod is taken between the fingers and thumb of each hand, and dipped into the pool of emulsion right across the plate. The emulsion will run between the rod and the plate to each edge of the latter. By a motion of the finger and thumb of each hand, the rod is lifted the smallest possible distance from the plate, and is rapidly moved first to one end, then to the other, the tips of the finger and thumb resting on the level table as a guide. This, if properly done, will cover the whole plate with emulsion; and if the plate be small—half-plate or under—it is sufficient to slide it to the far end of the table to set. If the plate be large, the coating will not be evenly spread unless it is lifted, balanced on the tips of the fingers of the left hand, and rocked gently for a few seconds. By

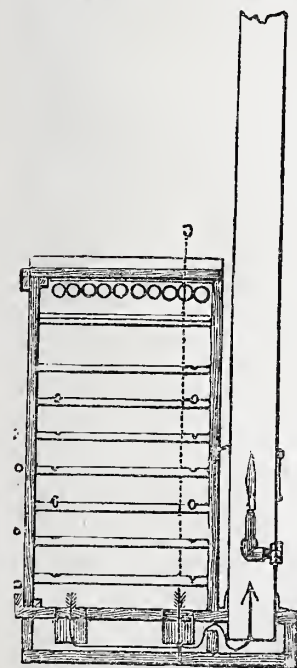


FIG. 121.

this method plates may, after a little practice, be coated with great rapidity. There is no need to wipe the rod each time it is used.

"As no excess is poured off the plate nor spilled in this method, it is possible, by using a very small teapot, to keep a constant check on the quantity of emulsion going on to the plates. The covering power of the slow emulsion will be found somewhat greater than that of the rapid. With each ounce of the slow emulsion, eight quarters or four half-plates may be coated; with the rapid, only seven quarters or three halves.

"The plates will 'set' in a few minutes—that is to say, the emulsion will stiffen like a jelly—and will not run off the glass, whatever position it is placed in. They are now transferred to the drying box. When dry, they are ready for use.

"The drying box calls for some description. There are various forms in use. They all have in view the inducing of a current of air among the plates generally by the burning of a gas jet in a tube or chimney. The fault of most is that the air passages are far too contracted. In many, heat is applied to the incoming air. This is quite unnecessary if the air passages are sufficiently large and well arranged, and if the box can be placed in a fairly dry place. It is, moreover, the greatest mistake to use artificial heat in drying plates, if it can possibly be avoided, as they are rendered distinctly slower thereby.

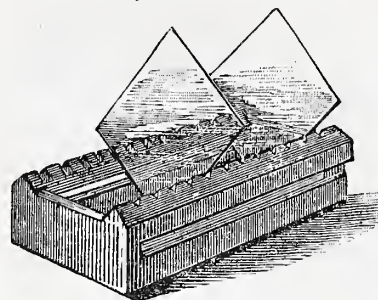


FIG. 122.

first designed by Mr. G. F. Williams. A sketch of one of these is given (fig. 122). Two plates may be placed back to back in each pair of notches if desired. The racks can be placed on the cross rods shown in the box, the height of which may be adjusted to suit various sized plates. Boxes and racks as described are made by Messrs. D. Gordon Laing and Son, 2, Duke Street, Adelphi London, W.C."

"We illustrate (fig. 121) a form of box which has been in use by the writer for several years, and has given complete satisfaction. It will be seen that the air enters at the top of the box. It is drawn into an air chamber at its lower portion, and hence passes up the large tube with a gas flame burning in it. This tube must be carried either into the open air or into a chimney. The plates are placed in racks, which were

## Elementary Photography.

BY JOHN A. HODGES.

### CHAPTER XVI.

#### PHOTOGRAPHING ARCHITECTURE.

The Utility of the Swing-back—When its Employment is Required—The Legitimate Use of Wide-angle Lenses—Distortion—How to Remedy by the Employment of the Swing-back—Other Uses of the Same—Architectural Work—Its Suitability for Reproduction by Photography—Exterior Views—The Best Conditions of Lighting—The Photographing of Interiors—The Lighting—Halation, how to Mitigate—Edwards' Isochromatic Plates—Backing—Selection of the Point of View—Precautions—Sliding Leg Tripod Necessary—Focussing—Exposing, Development of the Plate—Special Treatment—Weak Solutions.

IN the chapter upon the management of the camera, no allusion was made to the use of the various mechanical devices with which the camera is fitted, the omission being made in order that the mind of the beginner might not be confused by having too many details presented to him. Therefore it now becomes necessary to describe in some detail the use of the swing-back, the rising front, the reversing back, and the different motions with which the camera is fitted. Now, all these movements are most useful and most likely to be required when subjects of an architectural nature are attempted, and I shall therefore in the present chapter deal with that most interesting and important subject.

We will assume that the reader has packed up his trap and has arrived at the place which he desires to photograph which for the sake of illustration we will suppose to be in the first place, the exterior of a church. He wishes to



obtain a general view and to include the nave and the tower, and he finds that the only available position from which he can get an uninterrupted view of the whole building is from the graveyard, which is bounded by a high wall. The camera is set up and the subject focussed, but upon examining the image on the ground-glass it will probably be found that instead of getting in all the subject we have only a portion of the nave and about half the tower. This we might overcome by getting further away from the church, but that we are prevented from doing by the high boundary wall. The question arises, how can this difficulty be overcome, and the answer is by the employment of a wide-angle lens. It was in contemplation of such obstacles occurring that in the chapter upon lenses I advised the reader, if purchasing a second lens, to choose one of the wide angle type. Assuming the advice to have been followed, we unscrew the rapid lens and substitute the wide-angle one. Upon again examining the view on the ground-glass we find that now the whole of the subject appears upon the plate, the battlements of the tower being clearly seen against the sky, but upon more closely examining the picture, we notice that the whole of the building appears to be falling over, and the walls of the tower, instead of being parallel, rapidly converge. What is the reason—is this a defect inherent in the lens? By no means; the fault lies in the adjustment of the camera, the back of which, it will be noted, is not parallel with the building, which it must always be in order to preserve the rectilinearity of the lines. This might be easily remedied by adjusting the tripod until the back of the camera is plane with building, but upon again looking at the ground glass we find that although there is no distortion of the lines, we have, in moving the camera, got an undue amount of foreground in our picture, and completely cut off the top of the tower. The question again arises, is there any remedy? Fortunately, there is, and it lies in the proper use of the swing-back. We have, therefore, to again tilt the camera upward until we get all the subject on the plate, when, of course, distortion again appears. If we now, however, unscrew the milled heads at the side of the camera, and move the swing-back until it is parallel with the building, the lines will once more appear free from distortion. But a new difficulty now arises. Before we resorted to the use of the swing-back the whole of the picture appeared in fairly good focus; now, however we may manipulate the pinion, we cannot succeed in getting the whole of the picture sharp. The only remedy for this is to insert a smaller stop, and upon doing so we find that the whole of the image becomes sharp. From this experiment we learn that when the swing-back is used smaller stops (and consequently a longer exposure) will be required. In the foregoing illustration I have endeavoured to explain in a thoroughly practical manner the use and object of the swing-back. Those who may desire to learn more on the subject from a theoretical point of view I must refer to more advanced treatises, such as "Abney's Instructions in Photography," which contains an excellent chapter upon the subject. The swing-back is also used for bringing different planes of a picture into better general definition, and is largely so used in photographing portraits in the studio. Such use, however, must necessarily introduce a certain amount of distortion, and is therefore to be deprecated.

There can be no doubt that photography excels more in the reproduction of architecture than in any other branch of the art. It reproduces every intricacy of detail in the beautiful carving which is to be found in some of our cathedrals and churches, with a fidelity unattainable by any other means. A day's work in some old cathedral, mansion, or castle gives me the greatest enjoyment, and as

many of my readers may possibly share this feeling with me, it may be useful here to give them the benefit of what experience I may possess.

Outdoor work and exterior views present no particular difficulties. *Weak sunlight* will be found to give the best lighting. Diffused light is apt to produce flatness, while very strong sunshine will probably give hard negatives with an absence of detail in cast shadows. An all-over-alike, even lighting should always be avoided, as the beauty of an architectural photograph is largely dependent upon a good contrast of light and shade. The swing-back, as I have already observed, will frequently have to be employed, though in some cases it may be possible to dispense with its assistance by raising the rising front, and whenever it is possible this should be done.

The greatest difficulties will occur when the photographing of interiors is attempted, and this, no doubt, is a branch of work which will require some practice before complete success is attained. This work should never be attempted, at any rate by a novice, in any but diffused light, as the great thing to be avoided is undue contrast and the defect known as halation, a term which has already been defined in the chapter upon "Defects." Let me recommend the reader to use Edwards' isochromatic plates for this work; those of medium sensitiveness are best, as I find there is less halation with them than with ordinary plates; they should, as a further precaution, be backed in the manner I have previously described.

A great deal of the pictorial effect of the photograph will depend upon the careful selection of the point of view. In photographing the nave of a cathedral, which generally makes a pleasing picture, care should be taken to avoid placing the camera quite centrally in the aisle; it should be placed either to the right or the left, so as to show one row of pillars in profile as it were. Care should also be taken to avoid, as far as possible, objects such as pews, etc., obtruding themselves in the immediate foreground, which would tend to give an effect of exaggerated perspective to the view. A sliding or adjustable leg tripod is almost indispensable in this sort of work, and the precaution should be taken to stick the iron shoes well into three good bungs, which will prevent injury to the floor, and the tripod from slipping on a stone floor. It is sometimes very difficult to focus accurately, owing to the dimness of the light. I find the best plan, when taking general views, is to focus on a window, and then to give the milled head a slight turn, moving the pinion perhaps the 1-16th of an inch forward, so as to lengthen the focus and get objects in the foreground sharper. It is best to use a rather small stop, say  $f/32$ , as good definition is imperative in this class of work, and give a full exposure. The duration of the exposure will, of course, depend upon the amount of light, and no rule can be laid down. In photographing dark interiors, however, it is difficult to over-expose. It is far better to err upon the side of over than under-exposure. The former can be remedied, the latter cannot—an under-exposed interior should be consigned to the dust-heap. My own practice is to give the fullest possible exposure, and develop very slowly, and with a very weak developer. As I have said, undue contrast is generally the most difficult thing to avoid, and the only way to successfully overcome it is to work on the system I have indicated. I compound my developer somewhat as follows, varying it, of course, according to the nature of the subject. Pyro is the best reducing agent to employ for this class of work, hydroquinone the worst. To make two ounces of developer I put 20 minims of the pyro solution, 10 minims of bromide solution, and 10 of ammonia in a measure, making the bulk up to two ounces with water. This developer, weak in all



its constituents, is then applied to the plate. Time must be allowed, for although the exposure has been full, the action of this solution will be slow. In about five or six minutes the high lights, represented by the windows, will begin to appear. At this stage about 5 minims of ammonia solution should be added, and the solution re-applied. The image will now slowly gain in strength and detail, and after the developer has acted upon it for about ten minutes, the plate may be removed and examined. We shall probably find that we have a negative full of the most exquisite detail, but thin and lacking in density. This is what we aimed at, and is an indication of success. The developer is poured off and a fresh one mixed as follows: Pyro, 40 minims, bromide 30 minims, ammonia 30 minims, water 2 oz. This is then applied to the plate, which, under its influence, will rapidly acquire density. Sometimes sufficient density is obtained with the weak developer, in which case it will not be necessary to apply the strong solution. The rationale of this system is to bring out all possible detail without producing undue density, and then to strengthen the weak image by the application of a normal solution, or one strong in pyro.

(To be continued.)

## The Lantern, and how to Use it.

By C. GOODWIN NORTON.

(Continued from p. 324.)

### CHAPTER XI.

#### LANTERN SCREENS.

UNDOUBTEDLY the best material on which to project the picture is a smooth wall covered with dead whitewash, such as is used for the best ceilings, and many schools and institutions are supplied with such a desideratum.

To prepare a screen like this, supposing the wall to be moderately smooth and free from uneven places, it should first be sized all over, rubbed smooth with pumice stone and glass paper, and then coated with whitewash. Size is much improved by dissolving with it about one-tenth of its weight of alum. Whitewash is prepared by rubbing down whiting with water until it forms a thick cream. A solution of hot size with the alum is poured on to it, and the whole vigorously stirred. The alum will cause the mixture to froth up like yeast, therefore be sure that the vessel is large enough to prevent its going over the top. When cold, the whitewash should set as a jelly; if it does not do so, it is a proof that there is not sufficient size.

In order that the colour may appear white, it is necessary to add a little blue, the proper shade depending upon whether an oil-lamp or the lime-light is to be used; this can only be ascertained by actual trial, as the colour of the light produced by oil-lamp, safety jet, and mixed jet varies considerably in practice.

After one coat has been applied, should there be any rough or uneven parts, the holes can be filled with a stopping made of equal parts plaster of Paris and whiting mixed into a thick paste with water, the hole being wetted to receive it. The wall is then rubbed down again and the final coat of whitewash given.

Should the wall be old or already papered, it must first be made as smooth as possible, papered with white lining-paper, and then whitewashed. In some institutions the screen is made to roll up like a blind. This is convenient when it is only used occasionally, but after a time creases generally appear, and it is difficult to keep it flat. In the absence of a fixed screen it is usual to employ a sheet made

either of linen or calico. The former can be procured in any width up to 10 feet, the latter 9 feet.

When a larger sheet is required it is better to have a wide width in the centre with a narrow strip at the top and bottom. The screen should be bound round the edges with strong webbing, which should be slightly elastic and not liable to shrink in washing.

Some operators prefer tapes sewn at intervals all round the screen to fix it by. Others have eyelet holes bound with brass near the edges, and a wide hem on the top side through which a rope can be passed. When only a small screen is required, it can be conveniently made by stretching a piece of calico on a board, and pasting white paper on it to get a good surface. The best drawing or printing paper should be used for this purpose; the common sorts and white wall-paper invariably turn yellow in a short time.

*Screen Frames.*—These are portable structures on which may be fastened the screen when there is no other means of fixing.

They are generally made with deal poles or bamboo sticks jointed together with brass ferules, something after the manner of a fishing-rod. With many of the frames now offered for sale, lightness and portability have been more considered than strength and rigidity. For sizes up to 10 ft., the diameter of the poles should not be less than  $1\frac{1}{4}$  in., and for screens 15 or 20 ft. at least  $1\frac{1}{2}$  in. As before stated, a 20 ft. screen is four times the size of one of 10 ft., and possibly six times the weight, without taking into account the extra leverage. The corner pieces should be strong castings, with a grooved pulley wheel attached to draw the screen up by; and brass tube, to form the ferules, at least 4 in. long, should be firmly brazed or hard soldered into them. The brass ferules should be at least 6 in. long, and fastened to one end of the pole with fine screws. The end to be fixed should enter the ferule  $2\frac{3}{4}$  in., which will allow  $3\frac{1}{2}$  in. for the jointed end. The lower corners should each have a flange to fasten it with thumbscrews to the base piece, which should be at least 4 ft. long for a 10 ft. screen. The guy ropes are much more effective if fixed to the top corners, instead of being only 3 or 4 ft. from the base, as is usual with the ordinary frames. If there is any danger of the screen being overturned by a sudden draught of air or other cause, it had better be fastened to the floor by screw-eyes. With a small frame in a crowded room, it is frequently necessary to raise it a short distance from the floor to clear the people's heads. Four common chairs will generally be found sufficient for this purpose.

To fix a screen in a public hall or schoolroom ought to be a very simple matter, generally requiring only four screw-eyes, a gimlet, and a ladder. In some halls, where lantern exhibitions are frequently given, proper pulleys are fixed to the walls by which the screen can be pulled up at once without the trouble of using a ladder; but where no such conveniences exist, the best plan is to fix a screw-eye in the roof or in the side of the wall, or wherever they can be best placed on either side at a proper height, and corresponding ones in the floor immediately underneath; but if the lantern is placed much below the centre of the screen, put the bottom eyes further back. The rope is first passed through the hem, or the loops or eyelets on the top of screen, and fastened to the corners in such a manner that the strain shall be principally on the screen and not on the rope when the latter is pulled tight. Pass the ends of the rope through the upper screw-eyes, then down through the bottom ones. The screen can now be pulled as tightly as it will bear without splitting. When fastening off the rope to the screw-eye in the floor, care should be taken to make a knot that will be at once secure and easily untied. Perhaps the best way to effect this is to pass the end of the



rope round its upright part and back through the screw-eye, then round the rope again, but instead of putting the end through, make a loop as in tying a bow, and then twist the end of the rope round and round the whole, taking care not to pull out the bow. Note.—The end must be only passed once round the upright before passing through the screw-eye the second time, or it is sure to slip and get loose. The next thing to be done is to lace the sides. This can be effected by passing a thin cord alternately through the loops in the sides of the screen and round the rope, commencing a little way from the top. All this can be done by one person, but the screen can be kept off the floor, and consequently cleaner, if two or even three people are employed. In these directions it has been assumed that there is some woodwork, such as a beam or rafter, in which the eyes can be screwed, and that the top screw-eyes can be inserted near the corners of the sheet.

When the screen is much less in width than where the screw-eyes have to be placed, it may be necessary to support it at the corners or in the centre. Sometimes this can be done from a beam or by wooden supports from the floor.

The operator's troubles commence when the walls are stone or plaster, painted and decorated, and the wood work is too high to be of any use, or even absent altogether, and supposing it is absolutely prohibited to drive a hook in the wall or put in a screw-eye, and no portable screen is available, he is placed in an awkward position, especially if his screen is fifteen or twenty feet square. Two ladders placed against the opposite walls will sometimes take the place of the top screw-eyes, but they must be well sloped, and the bottom rounds secured to the floor with screw-eyes; the other screw-eyes in the floor to fasten the rope by should be under the ladder and as far from its base as possible, or the weight of the sheet will pull the ladders over. But it is often difficult to procure two ladders of suitable length, and there is the risk of doing some damage getting them in and out of the building. If there is a builder's yard near, slips of wood such as are used for slating roofs are easily procured; they are made in lengths varying from ten to fifteen feet. Four of these nailed together will make a temporary frame on which to fasten the screen, but pieces of wood must be nailed across the corners to keep it square. This frame can be made on the floor or on the backs of the seats, and the screen fastened to it. The place where it is to stand must be indicated by a screw-eye, to which the bottom corners of this frame are loosely tied. If it is to stand against the wall at the end of the apartment, it may be kept upright by struts at the sides, which should be as long as possible. When once upright a very slight fastening at the top such as tying to the catch of a window or a small nail driven in the wall when the beadle or hall-keeper is looking another way, will be sufficient. When for various reasons the frame cannot be stood against the wall, it must be guyed to the floor with ropes from the top to screw-eyes in the floor, on the same principle that the mast of a ship is held by the shrouds.

When the screen exceeds twelve feet across, the wood forming the upright of the frame will probably bend in the middle. This can be remedied by supplementary guy ropes. When there is a beam or iron rod running across the hall, the use of a ladder can often be dispensed with, the screen being first stretched tight along the top by means of a wooden rod, which should be as light as possible; there are generally strips of wood of some sort, such as dusting-poles, lying about in the hall. The ends of the screen rope are thrown over the beam by means of an india-rubber ball or by some other missile which will not do damage should the aim be inaccurate. With nearly all these methods it will be

found unnecessary to use a ladder to remove the screen, which is a great consideration. It is scarcely necessary to mention that the screen should be perfectly safe, and some precaution taken to prevent persons falling over its fixings in the dark. The appearance of a screen is much improved by festooning a little coloured muslin round it; this can be bought at about 2d. per yard, with unlimited choice of colour. Crimson is, perhaps, the best. Nettlefold's screw-eyes, of which the operator should carry at least a dozen, are the best to use, as they are strong and enter the wood readily. They can be used for many purposes, such as wedges to keep the lantern steady on an uneven floor, to improvise a pressure-board out of a table or black-board, to fix the screen, or to fasten a door by screwing them between it and the post; but this does not improve the appearance of either.

## Useful Hints on Picture Making.\*

BY CHARLES WHITING.

THE first hint or suggestion I have to give you is to provide yourselves with a pocket compass and a view meter, if you do not already possess these things. And whenever you are rambling over the country in search of the beautiful, be sure to take them with you. To illustrate the use to which the compass should be put, we will imagine that while taking your walk you have wound round a bit, have somewhat lost your latitude, and therefore don't quite know the points of the compass. The day is of course a good old English cloudy one, and we will suppose you have come across a pretty bit that you think will make a nice picture if the sun will only shine on in the right direction. So you consult your compass. You know the sun rises in the east, reaches its zenith in the south at 12 o'clock, and sets in the west. You, therefore, can easily make a pretty good guess as to the time of day when the view or building will be illuminated at its best, and will know at what hour to visit it again with your camera on the first fine day that presents itself to your convenience. With regard to the view meter, I have already, at a previous meeting, explained the principles of and method of using one that I believe answers all the purposes of a view meter. But I have brought with me another one, the invention of Mr. H. W. Peel, the President of the Ealing Photographic Society, and this one is so simply made that there is no excuse for anybody being without one. The drawback to it is that it is only suitable for those members who do all their work with one lens.

Now before proceeding further with my paper, I should like to say a few words on the height that the camera should be used from the ground. And I think you may take it that, generally speaking, the camera should be on a level with the eyes, for then we picture most objects as we see them. It has sometimes been adduced in favour of a lower point of view, that artists generally make their sketches while sitting on a camp-stool or something of the kind, but I take it that with them it is simply a matter of convenience and comfort, and not because they like the lower point of view better. At the same time I am ready to admit, it sometimes happens that a more pleasing picture can be made from a low standpoint, and I call to mind such a case when I made my photograph of Bodiam Castle. There I had a very nice foreground of rushes, but the moat being rather wide, would have given me too much breadth of water, and therefore the castle would have been too high up in my picture. So to get over the difficulty I placed my camera very low down, and, so to speak, foreshortened the water, which enabled me to get the castle lower on my plate without cutting off any of the rushes in the foreground. And sometimes in landscape work, when you perhaps have a good foreground, a broad expanse of flat meadow land for the middle of your picture, and a good distance. I have myself met with such a case, and have remarked, "If there were only a herd of cattle in this field what a nice picture it would make!" But as we do not carry herds of cattle in our pockets to drop down just where we want them, the only other alternative we have is to lower the camera stand and so get rid of, to a certain extent, the uninteresting middle distance. In making pictures of buildings, both interior and exterior, I have never yet met with a case where a better picture would have been obtained by placing the camera lower than say five feet from the

\* Read before the West London Photographic Society.



ground. The moral of all this is, by all means go in for a tall tripod, but let it be a sliding one.

Perhaps it will not now be out of place if we consider for a moment the most suitable rapidity of plate to use for general work. And I may say, I have always advised the use of the quickest plates we can buy, for I am confident that as soon as we master the exposure and development we shall find them more serviceable than slow ones. And I maintain that it does not matter whether we are photographing landscapes, seascapes, interiors, or exteriors, we will be more likely to get truthful results if we make our negatives on quick plates. Our great aim should be, to make our photographs pictures, and if we can put a little life into them, we lend, as it were, an added interest to them. I will ask, how often do you find an artist paint a picture without putting some living creatures into it? And I will ask, how often do you see a photographic landscape that has life in it, and has not been taken on quick plates? I am, of course, aware that many photographs have been shown at exhibitions having very good figure studies in them, but these have been in nearly every case obtained by the use of trained models, and as it seems to me a very difficult matter for us to obtain suitable models, and cart them about with us in all our photographic rambles, I think the next best thing for us to do is to carefully use to a certain extent the living objects that chance may throw in our way. You may object that such models generally look ridiculous in our pictures, and to a certain extent I agree with you. But I contend that it simply shows that we have not used our camera with sufficient skill, and evidently have not made the exposure at the right moment. I may say, in concluding this portion of my paper, the only exception I know to the use of quick plates, is in making photographs of distant landscapes, but these, as a rule, do not show very well in photography, so that I think we may leave them out of our consideration altogether.

The next point that will claim our consideration is the question how to obtain the most suitable lighting in our negatives. If the view you wish to take is one with plenty of life, rapidly moving objects, etc., the sun should be shining nearly over the right or left shoulder, or, in other words, you should be well on the light side of the picture. But be careful not to have the sun immediately behind your back, or your picture will be flat, and you will not be able to get sufficient contrast on developing your negative. If you aspire to something more artistic, choose your subject with the light well behind it, and if possible have the light and shadows well massed together, and not broken up into little bits; such effects can generally be obtained when the sun is rather low, and sometimes when it is temporarily obscured by a passing cloud. Of course, in this case, you sacrifice some of the detail in the shadows of your negative for the effect, and it is well known that most of the so-called "night pictures" are made in this way.

If you wish to get plenty of detail in the shadows of your picture, the lighting should partake more of the character of the first example I have given you, with the exception that it should not be quite so full on the view. This lighting will also be suitable for exterior of buildings, etc.

For interiors the light should be as bright as possible, without the sun absolutely shining.

Now, I feel that I cannot let the present opportunity pass without speaking a few words on the art side of our science, or, perhaps, I should say, on the composition of the photographic picture, for I feel very strongly that a knowledge of the principles that govern artists in painting their pictures is as necessary to the photographer as is a knowledge of the mere technical work of the field and the dark-room. We may be able to develop with fair certainty, to focus accurately, and to expose without much fear of under or over doing it, but this knowledge alone will not enable us to produce pictures that may fairly claim to take a place among the art productions of our time.

It is a curious fact that the pictures by all great artists for the last three centuries down to the present time, appear to have been designed on some fixed principle, and if we examine them we shall find the most pleasing and agreeable compositions are formed more or less on the leading idea of the triangle or pyramid, the diagonal line and its contrasts (which is a variation of the same thing), and the circle with its modifications.

Now to define terms. What do we mean by "the composition of a picture"? Mr. H. P. Robinson says, "Composition in art may be said to consist of the selection, arrangement, and combinations

in a picture of the objects to be delineated so as to produce an agreeable presentation of forms and tones, to tell the story which is to be elucidated, and to embody the spirit of what it is intended the picture shall represent or suggest." Or, as Ruskin puts it, "Composition is the art of putting several things together so as to make one thing of them, the nature and goodness of which they have all a share in producing." Now the first and most important principle in composition that I shall call your attention to is a consideration of the balance of lines.

By balancing our picture we mean that if there are a good many lines running in one direction, we must endeavour to arrange some to go in an opposite direction, as a set-off against them, or else it will give the impression of instability, and without a due regard to this important quality a picture would appear ready to fall to pieces.

It is sometimes difficult to get the proper balance in a photograph, but a great deal may be done by introducing a figure in a suitable spot, or a few sticks or branches of a tree may be so placed that their lines run in a contrary direction to those lines we wish to balance, or lines produced by cast shadows may be made use of, and if all else fails, perhaps combination printing may be brought to our aid. Of course, you must understand me, that in trying to get balance into your picture, it must not be overdone. For it would be a terrible violation of good taste to introduce exact balance. Endeavour to get just sufficient to give stability to the picture, and in such a way that it will not assert itself too prominently on the beholder.

The next important element of composition I wish to draw your attention to is unity; and, like most of the elements which constitute a good picture, unity is a quality more easy to feel than describe.

Mr. Ruskin says, "The great object of composition being always to secure unity—that is, to make out of many things one whole—the first mode in which this can be effected is by determining that one feature shall be more important than all the rest, and that the others shall group with it in subordinate positions."

Mr. H. P. Robinson says, "In photographing any object, whether landscape, portrait, or group of figures, one leading idea must be maintained. The fact that has to be stated must not be clouded with confusion. The work should constitute one whole; it should fully pronounce its own meaning; there should be nothing left for verbal explanation. A picture should not require a showman; a picture that does not tell its own story is as tiresome as a volume overlaid at all parts with notes and annotations to explain that which should need no explanation." It is very good of Mr. Robinson to tell us all this, but it sometimes becomes difficult of execution, although I have often thought that photographers go somewhat back-handed to work in making their pictures. They go out with half a dozen plates without the remotest idea of what they are going to do (except expose them), and directly they come across something pretty, down goes the camera and they have a shot at it. Well, this is all very well, but how does it compare with what an artist does in painting a picture? He first conceives an idea, and then adapts his materials and models to the purpose of carrying it out; every brushful of paint that he applies goes to tell the story of his picture and bear out its title.

Well, I will admit we have not quite such a free hand as this, but nevertheless I believe the time will come when we shall recognise this as the correct way of working; at least, if we wish our pictures to be looked upon as works of art. But I am afraid I am wandering away from my subject, and I will endeavour to give you an illustration of what is meant by unity. I well remember some few years ago, I was standing at the back of Canterbury Cathedral, looking across the green court at the old school-house beyond, known as "King's School," and I marvelled that those venerable old buildings had so well withstood the destroying hand of time. It was a lovely summer's day, the sun was shining with all his glory on a scene that was at once grand and solemn; even the very breeze that rustled under the shadows of the stately elms seemed to lend an extra charm to the view. And while dreamily gazing at the old house, I was in fancy carried back some 200 years, and I picture to myself the children just coming out of school, and playing and frolicking about in their old-fashioned dress. I thought what a lovely picture it would make if I could only have such life-models, when I was awakened out of my reverie by a troop of choir-boys, dressed in their white gowns, returning to the school-house from practice in the cathedral. How quickly then did my fingers move to get my



camera ready, but too late, too late, as they soon vanished beneath the portal of the old school-house, and my chance was gone. My reason for telling you this is that I might also say that if I *had* been able to have made my exposure in time, the very essence of unity would have been complete in my picture. But supposing instead of the choristers, a troupe of niggers or acrobats had come along instead, unity would have been at once destroyed, as such figures would have been entirely out of keeping with the rest of the picture.

Besides the balance of lines, we must also endeavour to get a proper balance of light and shade into our picture, or what is termed "*chiaroscuro*." The word is, I believe, Italian, and means light-shade, but it is now understood to mean a very great deal more. It means that the lights and shades shall be so arranged and distributed in masses as it were, so as to produce a pictorial effect. It means that we must endeavour to do with our lights and darks the same as I have been advising you to do in arranging the direction of the lines in your picture. And it also means that we can, in a measure, retrieve a picture that is somewhat faulty in the composition of its lines, by a judicious arrangement or, I may say, proper placing of its lights and shades. And I am glad to say we have great power in this direction if we will only abide our time, if we will only wait until the light suits our picture and not be too impatient to uncap our lens—or, in other words, if we will only wait until the sun is just high enough and shining in the right direction to give us the shadows we are longing for. I often think that photographers lose their best chances of making pictures through not being sufficiently enthusiastic. I do not know if any of you have ever been up early enough to see the sun rise. If you have, and have seen it as I have seen it, when there are some suitable clouds about, I am sure it must have made you feel, as I have felt, that we unfortunately sleep the best hours of our lives away; that nature provides us with plenty of chances for making beautiful pictures, if we will only be industrious enough to get them; that the beautiful effects of atmosphere and the massing of the lights and shadows of our picture can better be obtained in the early morn, when the golden orb of day is rising up to dispel the mantle of darkness that enshrouds our mother earth, when there is just sufficient mist or dew in the air to give us what we prize so much in our picture, the quality we term atmosphere, and when we shall find that our friends the clouds are even more disposed to be kind and develop up in our negatives so that they will print, and leave us not with but half a picture.

Some of these effects can also be obtained in the early evening when the sun is rather low. But we must then be on the alert and ready to make our shot before he sinks too low and leaves us again to the darkness of our night.

In concluding this portion of my paper, I beg to offer the suggestion that it will be the making of this society if we can only persuade some of our artist friends to come here now and again and criticise some of our work. Not to give us that criticism that partakes more of flattery than anything else, but to give us good, honest criticism that will show us where we are at fault in our work, and indicate what is wanting to improve our pictures. This is the criticism we require, and I am sure one and all of us will receive it in a proper spirit and with thanks, and I am also sure our future exhibitions will show a very marked improvement in the quality of the work shown as compared with our previous attempts.

## Yottings on Amsterdam.\*

BY W. H. WEBSTER, L.R.C.P.E.

A FEW weeks ago I left the Tyne on the s.s. *Chipchase*, bound for Amsterdam. After a rather stormy passage (twenty-six hours) we arrived at Ymuiden, a fishing village situated at the entrance to the canal. A group of people, including a policeman, watched our arrival and afforded a shot with the hand-camera. The village consists almost entirely of fishermen's houses and the market, a long building with a tower and curious roof. The fishing boats with their crews looked very picturesque, some making sail and gliding slowly out of the harbour, others coming in with their cargoes for the market. We then entered the lock and took pilot and steersman on board. I obtained several shots at the boats and the men running along the lock, making fast the

steamer, etc. In a short time we were through the gates and into the canal. A thick coating of ice covered the surface of the water, our vessel having literally to plough her way through it. A certain speed only is allowable in the canal, as the banks are very low and the rush of water caused by the rotation of the propeller might break them down. The whole country round about may be flooded in twenty-four hours, so great care is requisite. The whole country is very flat and monotonous and was covered with snow, but just outside Ymuiden it is fairly well wooded, and villas dotted here and there amongst the trees relieve it. Here and there on our course we see a Dutch farmstead, consisting of a few wooden houses, a haystack or two, windmill, and landing stage. The farm produce is shipped here for town use. Some of these huts are brightly coloured. They seem very isolated, but the people are very sociable, dancing and various games being freely indulged in. Now we may see a steamer coming down the canal, or perhaps a passenger launch passes us with her load of passengers bound for various places on the canal. A great many smaller canals intersect the main one. Small steamers towing wood logs, etc., fishing boats and barges are seen in plenty, affording scope for hand-camera work. We now pass through the Velsen Railway and foot-bridge (of both of which I obtained views), and are rapidly nearing the city. A petroleum dock was the next object of interest, but we were too far off to obtain a shot at it. The petroleum carriages, having the appearance of cylinders mounted on wheels, were standing alongside huge reservoirs into which the vessels were discharging. Some of these reservoirs were in course of construction. The sun was shining as we neared Amsterdam, causing a slight haze to envelop the city. The railway station is the first structure that strikes the eye. It is a long arched building with a very fine frontage in red brick with ornamental designs on the towers. A few steeples here and there, with plenty of dock frontage, completed my first impression of Amsterdam. There was a good deal of ice covered with snow in the docks, making the vessels appear as if they were skating.

Our steamer having been made fast, a move with the camera was soon made. The streets were originally canals, but many of them are now filled or partly filled in. They are exceedingly beautiful, with avenues of trees down the sides, the water in the centre, and spanned by numerous bridges. Near the railway station we got several shots at the groups of men engaged in taking the milk from the small launches and placing the cans upon hand-carts ready for distribution. The main street is very narrow and the houses are very high. At night this street has a most attractive appearance, being simply a blaze of electric light. The shops and cafés are numerous and good. As the town is built on piles driven into the ground, which is very sandy, most of the houses lean to a greater or less extent, giving the streets a very unsafe appearance. Luggage is conveyed to different stories in the houses by means of a pulley from the roof worked entirely outside, a very convenient arrangement. The museum next claimed our attention. I was unable to obtain any photographs of it, either exterior or interior. In the first case the sun was shining directly into my lens, and in the second photograph it was not permitted inside. It is a fine building situated in an open square. We had only a short time at our disposal, so were just able to get a cursory view of its beautiful interior. Some of the best pictures of the Flemish school are to be seen here. There are some magnificent Rembrandts—a fine study of Sarah Bernhardt attracted our attention particularly. There are also some striking interiors with figures, lighted by candle-light. One gallery is devoted to anatomy, and contains some most gruesome subjects; another to architecture, landscape, portraiture, and so on. Every photographer ought to visit this museum and study some of these most magnificent pictures. The sections on tapestry, shipping, with its models of ancient war vessels of all types, curios, ecclesiastical subjects, armoury, etc., are well represented, the latter being shown in a large gallery or rather hall. There are many fine windows, and the statuary is superb. I have here only been able to indicate the principal sections. The place must be visited to be appreciated, and it contains many valuable lessons to us on art and science. Returning from the museum, we visited the Café Krasnapolsky (winter garden), taking one or two street views on our way. This café is a very fine one, and refreshments can be obtained here at most moderate charges. The floral and electrical decorations are well worth seeing. There are plenty of amusements to be found in Amsterdam, and in the summer it is a charming resort for the photographer.

\* Read before the Haltwhistle and District Photographic Society.



## Enlargements.\*

BY J. AGARS.

To most amateur photographers the task of making enlargements appears beset with obstacles which seem to them almost insurmountable, and to this we must attribute the fact that we see so few enlargements made by amateurs compared to their numbers. Before the advent of gelatino-bromide paper, which is particularly well adapted to direct enlargement, both by artificial and diffused daylight (to the former of which I will confine my remarks to-night), direct enlargement was a thing rarely practised except by large firms who could afford to erect the ponderous arrangement known as a direct solar enlarging camera, or by those who cared to go in for the somewhat difficult process of collodion transfers. In fact, the practice of direct enlargement was beyond the scope of the amateur of those days, and also of many professional photographers. But the advent of gelatino-bromide paper changed all this, and to enlarge is now almost as easy as to make a contact print.

The term "direct enlargement" means enlargement without the necessity of first producing an enlarged negative, as is necessary in some enlarging processes—enlarging by the "carbon" process, for instance. Most of you understand the principle of direct enlargement, but those of you who do not will readily conceive it by considering the action of the optical or "magic" lantern. In this a small transparency, or, as it is more commonly called, a "lantern-slide," placed behind an objective produces a greatly enlarged image on a screen at some distance in front of it. Now if a sensitive surface be substituted for the ordinary screen, there would of course be produced on this surface an image, which in the case of an ordinary *positive* lantern-slide would on development produce a negative of the picture so projected. If, however, a *negative* be used in place of the lantern-slide, the image produced would, on development, be a positive. In each of these cases, by the term image I mean the latent or *chemical* image and not the *visual* image, for that in both cases is the same as the slide used, whether positive or negative; that is, a positive slide produces a positive *visual* image, and *vice versa*.

From the foregoing you will understand that an enlarging lantern is in fact optically the same as a magic lantern, one point in which they differ being that the enlarging lantern is so constructed as to prevent as much light as possible escaping from it, except that which passes through the negative and lens to form the picture. The lantern when used for enlarging must be used in a room which is illuminated only with a ruby or orange light as in the ordinary dark-room.

For focussing, the image is thrown on to a piece of white paper fixed to a board, the distance between which and the lantern can be readily adjusted. The further the paper is away from the lantern, the larger is the image, and *vice versa*. When properly focussed, the cap is placed on the lens, the paper removed from the board without disturbing its position, and the gelatino-bromide paper fixed with drawing pins in the position occupied by the white paper whilst focussing. In practice I prefer to use an ordinary printing frame, large enough to take the paper for the required enlargement, with a piece of thin glass which must be free from air-bulbs and scratches, for by this means the paper is held perfectly flat. It is convenient to have a cap having a yellow glass front for the lens, for by the use of such a cap you can see, after the sensitive paper is in position, and before exposure commences, that all is right. All being ready, the cap is removed and the exposure commences. This may vary when artificial light is used, from a few minutes to an hour or more, according to the nature of the light, the density of the negative, the sensitiveness of the paper, the rapidity of the lens, and the amplification of the negative which is being enlarged.

The greater the enlargement the longer the exposure necessary. It varies as the square of the number of times that it is required to enlarge. For example, you wish to make two enlargements from the same negative—one twice as large, the other three times as large as the negative. These measurements are *linear*, not square—that is, the measurement of the diagonal of the negative; and when we speak of an enlargement being twice the size of the negative, we mean that the diagonal of the enlargement is twice that of the negative. Such enlargement is generally expressed by saying that the one is a "two diameter"

enlargement, the other is a "three diameter." The exposure required for these two enlargements would vary as 2 squared ( $2^2$ ) is to 3 squared ( $3^2$ ), or as 4 is to 9. The larger one would require fully twice the exposure of the smaller, or, to be correct, two and a quarter times the exposure. The distance of the lantern, or, more correctly, the centre of the lens from the sensitive paper, for any given size of enlargement is calculated by means of the following formula:  $d = (n + 1) f$ ;  $d$  representing the required distance,  $n$  the number of times of enlargement, and  $f$  the focal length of the lens used. That is, add 1 to the number of times enlargement and multiply by the focal length of the lens used. Thus, suppose the focal length of the lens to be 5 in., and we wish to enlarge from quarter-plate to whole-plate or two diameters, then  $n = 2$  and  $f = 5$ , so that the formula stands  $d = (2 + 1) 5 = 15$  inches. The distance between the negative and the lens is found by dividing the distance between the paper and the lens by the number of times enlargement.

In considering the lantern as used for making enlargements, it may be divided into four parts, under the heads the body, the light, the condenser, and the objective. Taking the heads in the order given, I will briefly describe each in an abridged form, as described in an article on enlarging in the "British Journal Almanac" for the year 1888, by the Editor.

*The Body.*—The strength of this in all its parts must be such that the light, the condensers, the negative, and the objective be held securely. Elegance must give way to strength. The covering, no matter of what it consists, will be sufficient if it prevents any leakage of light except that which passes through the lens to the enlarging screen.

*The Light.*—This must be small in dimensions and intense in quality; the former in order to obtain sharpness, the latter to obviate the necessity of giving a protracted exposure. To this end the operator has ample choice: mineral oil lamps of various patterns; limelight; gas in the form of the Welsbach lamp or enriched by a suitable hydro-carbon, such as albo-carbon or naphthaline; and the electric light. But for general simplicity and uniformity of light I think the mineral oil lamp is best suited to the requirements of the amateur worker.

*The Condenser.*—Mr. J. Traill Taylor, in his article on enlarging, devotes nearly four pages to the condenser alone, and illustrates it with several elaborate diagrams, which will give you an idea of the important part played by the condenser. I think, however, it will be sufficient for the purpose of this paper to say that the function of the condenser is to intercept the diverging rays of light as they pass from the luminant, and to refract them so that as much light as possible is made to pass through the negative (illuminating it evenly all over its surface) into the lens forming the picture. The size of the condenser must depend upon the size of the negative to be enlarged. To get the best results out of a negative, the condenser must fully cover it, in fact, more than cover it. For a quarter-plate negative the condenser should be at least  $5\frac{1}{2}$  in. in diameter.

*The Lens.*—This also is an important factor, and, as with the condenser, Mr. Taylor devotes a considerable space to it. If the subject to be enlarged is a portrait, say of carte-de-visite size, then a quarter-plate portrait lens will be found to be the most suitable; but it is of the greatest consequence, however, that the back lens of the combination be placed next the negative. There will be no necessity for using a diaphragm in the lens, as the area of sharpness when employing full aperture will be quite sufficient for the intended purpose.

In the case of a landscape or group which fills the plate to the margin, it will be requisite either to make use of a diaphragm or to employ a lens of longer focus. A combination lens of the "rapid" doublet type will be found excellent in the case of a landscape, in which, unlike a portrait, the marginal definition must equal that of the centre.

I think it is generally admitted that the best lens to use for enlarging any given negative is the lens with which the negative was taken.

With reference to the focus of the lens, it must be understood that the solar or equivalent focus is not the focus when employed for enlarging. Suppose, for instance, that the equivalent focus is 6 in., the distance between the centre of the lens and the negative to be enlarged would be 6 in. practically were the screen on which the enlargement is projected at infinite distance. These two, the negative and the screen, represent the anterior and posterior conjugate foci of the lens.

But as such a position of the screen is impracticable, it must

\* Read before the members of the West Surrey Photographic Society.



be brought nearer, and as there is a strict relationship between the conjugate foci, the nearer the screen is made to approach the objective, the further must the negative be removed from it. When the screen has been brought so near as to show the image of the same dimensions as the negative, then if a measurement be made, it will be found that the lens has now a focus of twelve inches, or double that which it has for distant objects. From this it will be understood that the diaphragms have not the same values as those usually marked on them, but that they are really halved; that is,  $f/8$  becomes  $f/16$ , and so on in the case just mentioned.

Having so far explained the principle of enlarging on bromide paper by means of artificial light, and shown, I hope, how easy the operations are, I will just make a short plea for the use of small cameras and the enlarging lantern as against employing large cameras. The making of enlarged prints from small negatives not only affords a pleasing and instructive pastime, but effects a considerable saving in the cost of camera and lenses, and is by far the most economical plan when large prints are only required from picked negatives.

Labour is saved in not having to carry large cameras, and personal comfort is thereby gained. Small cameras, especially of the detective or hand form, can be taken into positions unapproachable to large ones.

One important point I had almost overlooked is this—as faults which are scarcely noticeable in a contact print are magnified and often painfully apparent in the enlargement, it follows that the negative to be enlarged should be as perfect as possible. It should have no harsh contrasts, must possess half tones, have plenty of detail in the shadows, and be as sharp as possible.

In conclusion I will quote a short extract from "Notes on Enlarging" just now appearing in the *AMATEUR PHOTOGRAPHER*:—"The future of photography rests in the practical solution of the amplification of small photographic images. In fact, with the optical means actually at our disposal, we can produce with certainty a small proof—the size of a card picture, for example—of absolute sharpness, both at the centre and margins. If we effect the enlargement of this proof with a perfect apparatus, we shall obtain from it a proof of plate size, double plate, entire sheet, and of even one metre high, with an extreme perfection, such that any objective, employed directly, cannot produce one either so beautiful or so fine." Thus writes Monckhoven in his 'Photographic Optics,' book ii. p. 155, and whilst we may not quite agree with him in toto, yet at the present time when small cameras, such as the hand or portable cameras, are so much in use, there is not the slightest doubt that enlarging has received more attention than at any previous time in the history of photography." Vide *AMATEUR PHOTOGRAPHER* of March 4th, 1892.

The paper I am using this evening is the Mawson bromide paper, and the enlarging lantern is Hume's Cantilever.

## Photo-Micrography.\*

THIS evening I hope to say a few words about the so-called photo-micrography, the most fascinating branch of photographic science. I say so-called because, although the general consensus of opinion leans to the adoption of this word, yet there are many, including Professors Draper and Klein and Dr. Bousfield, etc., who would prefer the more strictly correct term of micro-photography. It is in deference to the majority that I have used the word photo-micrography as the title of this paper. Professor Crookshank defines "photo-micrography as that branch of photography which treats of the production of an enlarged picture of a microscopic object by projection of an image of the object through a combination of lenses upon a sensitised film. It is thus distinguished from micro-photography, which should be restricted to signify the production by photographic processes of miniature pictures which require for their examination the aid of a microscope." The word photo-micrography is undoubtedly a misnomer, as "the art consists in adapting photographic methods to the microscope, and not micrographic ones to the photoscope." If we reason from analogy, the word micro-spectroscope is the adapting of the spectroscope to the microscope; the microscope is between the light and the spectroscope, and again in photo-micrography, the microscope is between the light and the camera, therefore the older term of micro-photography seems to be the

better word of the two. A writer in the "Medical Annual" for 1892 has divided medical photography into two heads, macro-photography and micro-photography (for the latter he prefers the term photo-micrography). The former will include photography of patients, parts of patients, and removed tissues and organs; the latter covers photography of the microscopical image. It is much to be regretted that here in the word micro-photography a grave error is conspicuous. The literal meaning of the word *μακρος*, from which the prefix "macro" is derived, is "long, far distant." This is not opposed to "macro" from *μικρος*, small, little; *μεγας* is the opposite of the latter. All Greek scholars will bear me out in this assertion. To sum up the matter, all photographic pictures which are smaller than the original should be classed under the term mega-photography, from *μεγας*, great; *φαος*, attic Greek contracted *φως*, *φωτος*, light, and *γραφω*, I write or delineate; or simply photo-graphy, as this is the most common method in use. On the other hand, those that are larger than the original should be included under micro-photography. I have referred to this at length partly because I want to be scientifically correct and partly for the purpose of throwing out a "bone of contention," to prevent our society degenerating into a mutual admiration society.

Photo-micrography extends as far back as 1802, when Wedgwood and Sir Humphrey Davy obtained with the solar microscope impressions upon paper, and with greater success upon white leather, though the results were transitory when exposed to daylight. Since that time progress has been steady and continuous, and more rapid of late years.

I will now proceed to describe the apparatus necessary to take photo-micrographs, and will introduce you to a system which considerably simplifies the ordinary methods advised and adopted. First as to the illuminating power. The following have been used: direct sunlight, electric, oxy-hydrogen, incandescent carbon, magnesium wire and powder, and paraffin lamps; the last two are within reach of most people, and give very good results. A simple and cheap flash-light apparatus I now show you. Of paraffin lamps, those with round wicks, and Martin's patent table arrangement for the flame to impinge against, seem to be the satisfactory. The one in use at the present time is a specimen of forty candle-power. The next thing necessary is a substage condenser or bull's-eye condenser, or both together which is far better; then comes the microscope with different objectives, 3 in., 2 in., 1 in.,  $\frac{1}{2}$  in.,  $\frac{1}{4}$  in., and even water and oil immersions of the highest grade. The higher the power, the longer the exposure. Lately, I have been using eyepieces, especially No. 2; this plan does away with the great length of the extended camera that is necessary to get a picture of any size when the objective is used alone, and then an especial arrangement is required for focussing, which is rather awkward. On the whole, I prefer the addition of the eyepiece although the best results can be obtained without. Next is the camera with the lens detached. Any ordinary collapsible one will do; you see in the one before you, Rouch's Eureka detective camera, which answers admirably, for the picture thrown on the ground-glass screen is just large enough. I have here an arrangement which has proved most useful not only for this work but for all kinds of photography. It is simply a bag made of two layers. Italian cloth with two holes for the hands and a larger hole for the insertion of the ground-glass screen. The glass of the latter can be taken out and a sensitive plate put in its place. The plates are kept in light-tight bags back to back, and by a simple arrangement of the position of the elastic band and folding of the bag, you can tell whether one or both plates have been exposed or not. I will now show you how these various parts are manipulated.

The plates I generally use are Marion's rapid, next the Paget xxxxx (which are the most rapid made). The isochromatic or orthochromatic are undoubtedly the best, but, unfortunately, their keeping qualities are not nearly so good as the first mentioned.

*Time of Exposure.*—With the oxy-hydrogen light, rapid plates, and highest powers, two or three seconds. A simultaneous flash with two lamps of ten grains of magnesium powder in each and one-inch objective combined with No. 2 eyepiece, will give a splendid negative on a Paget xxxxx. When a round wick paraffin lamp is used, a one-inch objective, and No. 2 eyepiece, two to three minutes are required; a quarter inch requires four to six minutes, one-tenth inch (water immersion) twenty minutes to half an hour.

*Developer.*—By far the best developer for all kinds of work is

\* Read before the Bournemouth Society of Natural Sciences.



the following—Hydroquinone 4 grs., sulphite of sodium 24 grs., bromide of potassium  $\frac{1}{4}$  gr. to each ounce of water. The accelerator used is five drops of a saturated solution of caustic potash to each ounce. The bromide may be slightly increased for time exposures. The old developer can be used for bromide prints.

*Printing.*—The author prefers the most rapid bromide paper, as the exposure is only two to four seconds before a small paraffin lamp such as is used in the dark-room. Silver prints give very good results and look the best. In conclusion, I must ask you to make full allowance for this meagre paper and the poor prints I have submitted to your notice; my only excuse is the very limited time I have had at my disposal. There is a great future before micro-photography; the time will come when we shall be able to record the exact movements of microscopic life, such as the heart-beats of the *Daphnia pulex*, or the lively motions of the *Cyclops quadricornis*, that prolific animalcule, a pair of which can produce in six months a progeny numbering 4,500,000,000.

## With a Camera in Spain.\*

BY AUSTIN J. KING.

You know what it is to listen to a pantomime overture. As the music bursts forth, it seems to convey so definite a promise of great things to come, that the most veteran playgoer can scarcely help trying to forget past disappointments, and can scarcely dismiss a hope that, after all, this particular pantomime may turn out less badly than its predecessors.

So when, in February, or March, or April, the sun shines out clear and bright, when the sky is blue and the air musical with the chirping and twittering of birds, when the sun glints on hedgerows bursting into leaf, and tinged with gold the pregnant buds of the willow and the chestnut, and throws upon buildings that enchanting bewilderment of light and shade which is dear to the photographer's heart, we try to forget past years, past disappointments; we try to think that this year at all events we are to have a summer, and we make our plans.

We ought, perhaps, to know better; we ought to know by this time that summers exist hut in imagination, and that cold rain, biting winds, and thick mists of a most non-actinic character are what we really are to have. But hope springs eternal, and, as I have said, we make our plans.

We put away our magic lanterns, which have made so many a long winter evening too short for the young people whom we have amused and perchance instructed; we pack up our enlarging apparatus and our reducing camera; we hunt up our field-pieces and our batteries of lenses; we test our dark slides and examine our stands; and, if we are gifted with tidy ways, we find our tripod and its screw. We do all this with a glad heart, because we feel that we are once more to have the power and privilege of producing some new work; and the production of something new satisfies our yearnings more than any process of alteration. Enlarging, reducing, and printing are, after all, mere handmaidens of the art; they serve to improve, and to alter, and to multiply what has already had a being given to it. Such matters are tolerated, and, indeed, are welcomed in winter, but only because better may not be. They serve to whet our appetite for the more entrancing pleasure of reproducing realities: of making trees and woods and buildings, aye, and animals and man himself, subservient to us and to our aims—points and matter in the pictures we compose.

It may be that as our summer may be cold and wet and dull, our pictures may be flat and inartistic—mere studies of fog and mud; but if we hope in the weather, and that English weather, so we may hope in our own success. Hope springs eternal.

You, indeed, are debarred from one species of hope. You must not hope that I shall be able to tell you anything photographic you do not already know, or that I shall be able to intensify your general hopes of success by any record.

You might, indeed, gain knowledge and experience if I could recount you a series of failures—how two best views were photographed on the same plate, how an attempt has been made to get a view with an undrawn slide, or how the slide has been drawn behind an uncapped lens; but the recital would be too harrowing.

If, however, you will accept as an axiom that my ratio of success has been only just emerging from an abyss of minus, and

that I have and make no pretension to be skilled in the beautiful art-science which we profess, you may perhaps be interested in a few somewhat random notes of some ramblings with a camera abroad. They may serve to enhance the pleasure with which you are looking forward to the season which we hope is coming.

To one who seeks that best kind of rest, a total change of employment, there is nothing more delightful than to ramble abroad. It is not that the scenery is more beautiful or the average buildings more interesting than in our own country. I am of those who think that an elm tree can knock sparks out of a palm, that a grove of oranges and lemons is a sorry substitute for an English orchard, and that, to a tourist fresh from the hop gardens of Kent, the vineyards of France and Spain appear beneath contempt.

But the delight remains. The change of scene, of language, of food, of the train of thought is complete; and though our country never seems so fair as on our return from abroad, the very difference has a subtle and a restful charm.

But when our luggage includes a camera and fixings, there is a superadded pleasure—again of hope. Day by day we see on our focussing screen compositions of exquisite beauty, glowing in natural colour. True, we know that those colours must translate themselves into monochrome, but the remembrance of the coloured picture lingers in our fancy. True that but few of these compositions will ever survive the dangers of accident, of tilting camera, of mal-exposure, of over-exposure or under-exposure, of too dilatory or too hasty a development. But hope springs eternal.

Any particular picture may come out, and we sometimes, in moments of supreme exultation, find ourselves counting the number of our pictures—which-are-to-be by the number of plates exposed. Temerarious calculation! But such hopes add much to the delights of our ramble notwithstanding; and when we come home, what a delight to see glowing in the deep red light of the developing closet some picture we saw radiant under the brilliant Southern sun! Our memory is excited until the pleasure of sight returns once more, and we realise the scene as we saw it. Sometimes fog supervenes, and the picture is blotted out; but when we do get a picture, how we enjoy its possession! And when our waste-basket is heavy with spoilt plates (spoilt, as we generally convince ourselves, through some defect on the part of the manufacturer) and our portfolio is not quite empty, we feel that we have something we can show our friends.

It is very painful, of course, if a few bought pictures intermixed with the collection, occasion such remarks as "Well, this is really good!" and so forth, but people who make such remarks are never good judges.

I started for Mediterranean waters by steamer from London. My outfit included a McKellen whole-plate camera, with dark-slides and a roll-holder, and a hand-camera.

I had had visions of some snap-shots at Thames-side objects and those picturesque brown-sailed barges which excite such delight in the artistic mind, and call forth such burly anathemas from the pilots who have to keep clear of their devious and uncertain courses; but the fog was so dense that we could not see a yard from the bulwark. At all events, I thought, I am certain to get a view of the Hoe at Plymouth, of the Breakwater, and the shipping in the Sound. Vain hope! Mount Edgcumbe was just peeping out of the mist, and whether Plymouth and the Breakwater existed or not at that time, I can only speak on hearsay evidence.

Down went the camera below. It was now and again hauled up when some man-of-war passed near. But the distance was too great, and I had not spoilt a single plate when we cast anchor (four days later) beneath the shadow of the Lion Rock at Gibraltar.

-- Here was a chance, brilliant sun! The harbour was alive with small craft flitting hither and thither, flying over the water with their lateen sails spread like the wings of a bird. The lofty Lion Rock gloomed above the quaint little town, and the lines of the galleries, formed of batteries excavated from the solid sandstone, could be traced by the embrasures. The fortifications of the port, the gates and bridges, and lines of guns all stood out clearly defined. The picture was a beautiful one, and I got a good look at it on my focussing screen.

Then came up the quartermaster. "Very sorry, sir, but taking pictures of the rock is forbid, sir."

\* Read before the Bath Photographic Society, April 27th.



## Societies' Meetings.

**Aberdeen.**—The first excursion took place on the 9th inst. The party, which was fully representative of the now large Society, went by train to Laurencekirk, and then drove to Edzell via Fettercairn. The party on arrival in Edzell dined in the Panmure Arms Hotel, and subsequently sallied forth to explore the district. At the ruins of the old Castle of Edzell a whole battery of cameras was levelled. The excursionists found time to stroll along the banks of the North Esk, behind the village, but the scenery which attracted most attention was that in the vicinity of Gannochy Bridge. The day had, however, increased in gloom before this locality was reached by the general body of excursionists, and the prevalent dullness was decidedly against the taking of good pictures. They were most fortunate who had insisted upon "doing" the Gannochy Bridge before "doing" Edzell, and who had, therefore, had all the conditions in their favour as regards light. But though the sky was lowering, and the river scenery was largely pervaded by a sombre monotone, there was no depression in the spirits of the party. All the chief view points by the side of the river were soon alive with cameras, and everywhere there was a fluttering of black flags in the shape of focussing cloths. During the day those members who were supplied with detective cameras busied themselves taking snap shots. Of these and of the other pictures for which exposures were made it is anxiously hoped that something more or less definite will yet be seen. There is a specially eager desire to ascertain how the interesting experiment of taking three pictures on one plate has resulted.

**Ashton-under-Lyne.**—On the 14th inst. this society, under the leadership of Major R. Bradley, journeyed to Marple. Leaving the last-named place the party were taken through private grounds (permission having been obtained) to the Waters Meet, from there to Compstall and back to Romeley along the river bank; a capital tea awaiting the arrival of the members at the Romeley Arms Hotel brought to a close a most enjoyable but hard day's outing. The weather was beautifully fine, the only drawback being the strong wind. Number of members present, 29; plates exposed, 96. At the meeting on Thursday evening the Secretary (Mr. G. H. Dean) distributed samples of Dr. Jacoby's collodion paper, kindly sent by Mr. Otto Scholzig. Next outing, May 28th, Chew Valley; leader, Mr. C. E. Redfern.

**Belfast Y.M.C.A.**—On the 3rd inst. a most successful conversation was held in the large hall of the Y.M.C.A., Wellington Place, in connection with the third annual meeting of the Camera Club, and first public meeting of the newly-organised Lantern Mission. After tea had been served, the President, Mr. William Swanston, occupied the chair, and in opening the proceedings briefly reviewed the work of the club during the past year, and congratulated the members on the progress made, and on the successes gained not only at the late exhibition of the Ulster Society, but in several open competitions in England. Referring to the work of the Lantern Mission, which has been so successfully carried on under the direction of Mr. William Strain, he claimed the sympathy and support of all present. During the past winter free exhibitions were given once a month in many of the public institutions in the city, including the Soldiers' Home, Deaf and Dumb Institution, the Union Workhouse, Penitentiary, and other places, the cost in each case being defrayed by subscriptions from several gentlemen. During the evening music, recitations, and lantern exhibitions were given, the slides, including many fine instantaneous and animal studies, and cloud and sunset effects, kindly lent by Mr. James Stelfox. A large number of photographs by the members were displayed on the walls, and proved a great attraction. The report and statement of accounts, submitted at the business meeting on the previous evening, show the affairs of the club to be in a most satisfactory condition. An interesting programme has been arranged for the coming season, and special prizes offered for competition, by Mr. Strain for hand camera work, and Mr. Best for a set of six City views. The result of the Monthly Competitions in prints and lantern slides for the past year is as follows. The three highest were J. E. Pim, 209 marks, J. A. Pollock, 202, and T. B. Scott, 200, the first-named gentleman, therefore carrying off the Club Championship for the year. The office-bearers were appointed as follows:—President, Wm. Swanston, F.G.S., Vice-Presidents, S. B. Coates, M.D., W. J. D. Walker, Robert McCann, and William Strain; Committee: T. F. Bell, J. E. Pim, W. Pollock, T. B. Scott, J. S. M. Best, and James A. Pollock; Hon. Treasurer, James H. Hamilton; Hon. Secretary, James McCleery.

**Bolton.**—The usual monthly meeting was held on the 3rd inst., Mr. Wm. Banks in the chair. Messrs. J. T. Cooper and W. Abbot were elected members of the society. Mr. C. K. Dalton read a paper on the "History of the Stereoscope," and many stereo transparencies and slides were exhibited by Messrs. A. Knowles, J. Young, A.

Harper, J. E. Austwick and others, a number of the slides being from negatives taken at the Society's recent visit to Miller's Dale. Messrs. R. and J. Beck exhibited a Mirror stereoscope, and Messrs. Hushands (Bristol) one of Harding Warner's Panorama stereos, and Mr. Young a complete set of apparatus for producing stereo transparencies.

**Croydon.**—A goodly assemblage of members attended on the 9th inst. to hear Mr. E. J. Wall discourse on Development, the President, Mr. H. Maclean, in the chair. The result of a large number of experiments proved that, although it might not be possible to alter, as stated by Hurter and Driffield, the densities, it certainly was possible to alter the opacities, and thus influence the character of the resulting prints. A lively discussion ensued, Messrs. Goddard, Oakley, Packham, Isaac, Maclean, and others taking part. On the 14th inst., Mr. S. E. Burrows conducted an excursion to Mitcham; the train leaves W. Croydon at 2.30.

**Derby.**—The first outdoor meeting was held on the 7th inst. Fifteen members were present, leaving Derby for Kegworth at 1.30, and rather astonishing the good people at this place by the large array of cameras, tripods, etc. A pleasant walk of a mile and a half brought the party to the very quaint village of Lockington. Cameras were soon unpacked, and a number of pretty views taken. The members next wended their way to Hemington, which appears to be more particularly noted for its ruined church, founded in the year A.D. 1450. Journeying forward, Castle Donington was soon arrived at, where several more views were taken. A group of the members present was taken by Mr. Lowe, after which the party adjourned for tea. Altogether forty-two plates were exposed. Derby was reached at 8 p.m., each one expressing his satisfaction at such an enjoyable outing. Mr. A. H. Bennett officiated as leader. It was decided to hold the second meeting on Saturday, May 21st, the places selected being Clifton and Wilford, Notts; leader, Mr. Warham.

**Dundee and East Scotland.**—The monthly meeting was held on 5th inst., Mr. J. D. Cox (President) in the chair. It was arranged that the first outdoor meeting should be held at Killiecrankie and Pitlochrie on the day observed as the Queen's birthday. Specimen prints on Jacoby's collodion paper were exhibited by O. Schölzig. The prints were from negatives varying in density from thin to dense, but the resulting tone in each was identical. Although this paper does not print quite so fast as some of the gelatine emulsion papers, it tones quicker and very evenly. A French lens with iris shutter and the perpetual shutter adapted for working in front of the lens were exhibited by Messrs. Lowdon and Feathers respectively. The following office-bearers were elected for the ensuing session:—President, J. D. Cox; Vice-Presidents, G. G. MacLaren and Wm. Salmond; Council, W. Baxter, P. Feathers, D. Ireland, Dr. McGillivray, J. W. Munro, A. Stewart, J. R. Stewart, J. R. Wilson, W. Bertie, W. F. Hill, Dr. Tullock, and H. Valentine; Secretary and Treasurer, V. C. Baird, Broughty Ferry. Prizes were awarded in the "Landscape with Figure" competition to—1st, V. C. Baird; 2nd, W. Bertie; and 3rd, J. Rogers.

**Durham.**—A meeting was held on 11th inst., the President, Rev. H. E. Fox, M.A., in the chair. Professor Pearce, D.C.L., gave a very scientific and interesting lecture on "The Optics of Lenses," illustrated in a lucid manner by means of various diagrams drawn by the lecturer on a blackboard, as well as by lantern slides handed round and shown by means of the lanternoscope. The lecturer introduced his subject by reference to the theories and practice of pinhole photography, and explained the various forms and shapes of lenses, their use and abuse, their chemical and visual foci, chromatic aberration, refraction, definition, etc., and exhibited lenses and mounts in the several stages of manufacture kindly lent for the occasion, together with the lantern slides, by Messrs. Taylor, Taylor, and Hobson, the well known manufacturers of Leicester. The question box was then opened, but as nearly all the queries related to lenses, use of stops, etc., they were practically explained in the lecture. The Hon. Secretary notified that arrangements were being made for the first outdoor excursion to Alnwick and neighbourhood on Whit Monday. Pamphlet and exposure note-hooks kindly sent by Messrs. Mawson and Swan were distributed among the members by the Hon. Secretary and were greatly appreciated.

**Eastbourne.**—The first excursion was held on 11th inst., when about twenty members visited Pevensey Castle, over 100 plates were exposed, and after an enjoyable afternoon nearly all the members sat down to a hearty tea, which was duly appreciated. Next meeting will be held on June 1st: lecture "From Plate to Picture."

**East London.**—An exhibition of the American Prize Lantern Slides, kindly lent by the AMATEUR PHOTOGRAPHER, was given on the 10th inst., before a numerous and appreciative audience. The slides were shown by Mr. J. E. Wren, lanternist, E.L.P.S., by the aid of his exceptionally fine triple lantern, which was admirably manipulated by him, each picture being very ably described by Mr. Barnes. In addition to the prize slides, about fifty beautifully coloured slides, the property of Mr. Wren, were also shown, which were highly appre-



ciated. A few remarks from the Hon. Secretary brought a most successful evening to a close.

**Fairfield.**—Ordinary monthly meeting 10th inst., the President, J. L. Mackrell, in the chair, there being a large attendance of members and friends. After the election of new members, and the report on the excursion, the President proceeded with his practical demonstration on "The Development of Negatives," during which six plates, brought by different members, the exposures and conditions of light being unknown to the demonstrator, were developed by him with pyro-ammonia, pyro-soda and hydroquinone, and metabisulphite of potass developers, and he succeeded in getting six perfect negatives although they embraced different subjects, one being a snapshot taken at 6.45. Mr. Stainstreet's stereo slides and Mr. Mallabar's magnificent specimens on Ilford P. O. F. were much admired. During the evening lantern-slides, prints, Hurter and Driffield's Actinograph, and several other photographic novelties were shown, and Mawson and Swan's exposure note-books distributed by the Secretary.

**Hackney.**—The annual general meeting was held on 12th inst., the President, Dr. Roland Smith, in the chair. A satisfactory report was read by the Hon. Secretary, and the Treasurer reported £15 in hand to carry over to the next season. The following officers were elected:—President, Mr. H. Robertson; Council, Messrs. W. L. Barker, R. Beckett, F. W. Gosling, F. Houghton, W. P. Dando, and Dr. R. Smith; Curator, Mr. A. Dean; Treasurer, Mr. J. O. Grant; Hon. Secretary, Mr. W. Fenton Jones, 12, King Edward Road, N.E. The night of meeting was changed to Tuesday, and also will, after June, be every week. The entrance fees remain as before. It was also agreed that the club quarters be changed to a place of more social character, and premises have been secured where all the advantages of club life can be had. The society has ninety active members, and promises well for the future. During the past season papers, etc., have been given by, amongst others, Messrs. T. C. Hepworth, A. L. Henderson, Henry Sturmeay, Mackie, Foulkes, Winks, Sinclair, etc. A most successful exhibition was held last October, when Captain Abney presented the prizes to the successful exhibitors. Particulars of membership can be had on application to the Hon. Secretary. Visitors are always welcome to meetings.

**Herefordshire.**—The first field day of the season was held on the 12th inst. at Tintern. The day was exceptionally fine and all that could be desired. The party met the President, Alderman Blake, at Ross, who most kindly entertained them all to luncheon at Tintern. The members took several views of the abbey from all positions, and some very good subjects were obtained. Altogether about fifty plates were exposed in the vicinity. Some of the members also visited Symond's Yat, and took several views on the Wye. The party then returned to Hereford, after a most enjoyable outing. The President, Alderman Blake, intimated a wish to entertain the members to a field day at Speech House, about the middle of June, driving the party from Ross. Further particulars will be announced in due course.

**Hove.**—On the 10th inst. a paper was read on "Hand-Camera Work" by Mr. C. Job. This gentleman used a Shew's "Eclipse," and showed some work which he had done with it. The prints were on Ilford P.O.P., and were pronounced by the members present to be the finest specimens of work they had seen. Some were skating scenes, and though taken in dull wintry weather were as clear as those taken in summer. Mr. Job does not recommend hand-camera work for beginners, but looks forward to the time when the tripod will be almost dispensed with. He recommends hydroquinone development, sometimes finishing with eikonogen; and ordinary plates whenever possible. His winter pictures were on Edwards's isochromatic. He pointed out the great scope which Brighton offered for this class of work, most of that shown having been taken in or near Brighton. Mr. E. J. Bedford exhibited some fine specimens of work done with a "Chadwick" and Taylor's D lens, and Mr. W. O. Ford some good pictures with No. 3 Kodak. The following cameras were exhibited by the Secretary: No. 4 folding Kodak, No. 3 junior, with plate attachment, Shew's Universal, the Luzo, the Facile, the Chadwick, and two of Lancaster's. Some discussion followed the reading of the paper, and the meeting assumed an animated conversational turn, during which prints and cameras were passed round for inspection. Four new members were elected. Excursion to village of Poynings on Saturday, May 21st.

**Liverpool (Camera Club).**—The usual meeting was held on the 11th inst., the President, Dr. Webb, in the chair. Seven new members were proposed and elected. In continuance of the series of "Half Hours with Elementary Photography," Mr. Jas. Smith read a paper on "Silver Printing," conveying many useful hints to the members. Mr. C. A. J. Trevor also gave an extremely practical demonstration of "Bromide Printing." Mr. Trevor, who has had much experience, was greatly in favour of the ferrous oxalate developer, which he found gave very sharp and brilliant prints. The recently formed library is now assuming fair dimensions. At this meeting gifts of books were promised by Dr. Webb and Messrs. Freeman and Yull.

**Rochdale and District.**—A very pleasant afternoon was spent by several of the members and friends on the 7th inst., the place selected for the day's ramble being Fern Isle Wood and Rochdale Waterworks, situated about five miles from Rochdale, and, favoured with fine weather and a very good light, several plates were exposed on this artistic and pretty spot, which is very thickly wooded, forming plenty of scope for both camera and brush.

**Staff.**—The monthly meeting was held on the 10th inst., Mr. E. B. Wain (President) in the chair. Very good attendance of members, and four new ones were elected. A copy of the *Practical Photographer* for the current month was laid on the table, and attention was drawn to what the members considered a very inaccurate statement respecting the Society, after some discussion the Secretaries were instructed to write to the *Practical Photographer* drawing attention to the incorrectness of the remarks. Copies of *Photographic Work* were distributed among the members. The President gave a very interesting demonstration on "Flash-light Photography," illustrating it by several examples of flash powders of different composition and a number of lamps, etc., including Vever's flash pistol, a clay pipe lamp, home-made lamp and some others, and also the Todd-Forret lamp, by means of which he exposed several plates on groups of the members. During the demonstration these plates (Ilford ordinary) were developed with the new Ilford pyro and soda developer, and yielded very satisfactory results. At the conclusion Mr. Wain generously offered to present a silver medal to the Society for competition among the members for the best photograph of Staffordshire scenery. The offer was accepted, and it was left to the Committee to arrange the conditions of entry, etc. Next month Mr. J. Wedgwood Wyatt will give a paper on "How to Use a Camera," and there will also be an exhibition of apparatus and members' work.

**Sydenham.**—On 10th inst., the President in the chair, the Platinotype Company gave a demonstration of their "New Cold Bath Process," which was a great success. A large number of prints from members' negatives were developed in various ways, such as with a cloth dipped in the bath and wiped over the print, or with the hand, also by turning up the edges and so forming a bath of the print itself. Great satisfaction was expressed as to the paper and the tones, which were certainly finer than those of the hot-bath process.

## SOCIETIES' FIXTURES.

May 20.—CROYDON.

" 20.—LIVERPOOL CAMERA CLUB.—Excursion to Whyediall.

" 20.—LEWISHAM.—"Toning Ilford P.O.P.," Mr. E. Eastwood.

" 20.—RICHMOND CAMERA CLUB.—Informal Meeting.

" 20.—PEOPLE'S PALACE PHOTOGRAPHIC CLUB.—Discussion: "Developing Snap Shot Exposures."

" 20.—HOLBORN.—Discussion.

" 21.—SOUTH LONDON.—Excursion to High Beach.

" 21.—WEST SURREY.—Outing to Merstham.

" 21.—ACCRINGTON.—Outing to Chatburn, for Downham and District.

" 21.—CROYDON CAMERA CLUB.—Excursion to Nutfield, conducted by Mr. H. Maclean.

" 21.—OLDHAM.—Outing to Ashley for Rostherne.

" 21.—PEOPLE'S PALACE PHOTOGRAPHIC CLUB.—Outing to Carshalton and Beddington.

" 21.—ROCHDALE AND DISTRICT.—Excursion to Ashworth Valley and Simpson Clough.

" 23.—CROYDON CAMERA CLUB.—Lantern Night.

" 24.—EAST LONDON PHOTOGRAPHIC SOCIETY.—Ordinary Meeting.

" 24.—P. S. G. B.—Technical Meeting, "Ross's new Concentric Lens." Members are invited to bring their best lenses for comparison with it.

" 25.—PHOTOGRAPHIC CLUB.—"Developers for Bromide Prints."

" 25.—LIVERPOOL CAMERA CLUB.—"Hand-Cameras and Discussion."

" 25.—GRAPHIC (Plymouth).—Excursion to Brickleigh.

" 26.—LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—"The Photographic Study of Clouds and Lightning, illustrated by slides," Mr. A. W. Clayden. Visitors are welcome.

" 27.—RICHMOND CAMERA CLUB.—Show of Prints.

" 27.—CROYDON.

" 27.—HOLBORN CAMERA CLUB.—Lantern Night.

" 28.—OLDHAM.—Outing to Bolton for Turton Towers.

" 28.—PAISLEY.—Excursion to Kilwinning and Eglington.



# THE Amateur Photographer's Tourist Index.

Back Numbers, Post Free, 3d.

THE "Tourist Index" gives references to back numbers of the AMATEUR PHOTOGRAPHER which contain Articles on "Holiday Resorts and Photographic Haunts," and in addition many other items of interest to the "tourist photographer" given in "Answers" or "Letters."

The Editor will be glad if ladies and gentlemen will kindly contribute short articles upon any places of photographic interest which may not be included in the following "Index":—

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| Wye, Valley of the                       | ...       | ... | Article | ... | July 24, '91  |
| York                                     | ...       | ... | "       | ... | June 27, '90  |
| York, Peterbro' and Durham               | ...       | ... | 4587    | ... | July 17, '91  |
| Yorkshire, East Coast                    | ...       | ... | Article | ... | Sept. 20, '89 |
| Yorkshire                                | ...       | ... | 4849    | ... | July 17, '91  |
| Youghal to Lismore                       | ...       | ... | Article | ... | June 22, '88  |



5682. **Walking Tour.**—Would any amateur (young preferred) be agreeable to make up a photographic party to go on a walking tour for about ten days or a fortnight in the summer, North Devon preferred, but am not particular as long as there is plenty of work?—**N. M. H.**

5683. **Photography.**—Can any one tell me if photography is a practicable process for an impecunious amateur? If it is, what manual could be recommended on the subject?—**W. E. C. W.**

5684. **Grange.**—Can any of your readers supply me with some of the places of photographic interest round about Grange? Is the spot worth a visit for photography's sake?—**J. R.**

5685. **Windsor.**—Can one photograph anywhere in Windsor without permission, such as the taking of the outside of the Castle and in the Park? If not, who am I to refer to?—**W. R. P.**

5686. **Richmond and Kew.**—Who am I to refer to for taking photographs in Richmond Park and Kew Gardens?—**W. R. P.**

5687. **Brittany.**—Shall be much obliged for an outline of a short tour near the coast which might be profitably spent with a hand-camera (Swinden and Earp). The tour should not be an expensive one, and preferably out of the rut of English tourists, as I speak French. I want especially one or two good interiors and one or two good characteristic sea-side views. Shall be grateful for any information from Mr. Malan (who replied to a previous querist), or any tourist who can speak from experience.—**ALPHA**

5688. **Zimmerman's Paper.**—Can any reader tell me the best place to get Zimmerman's sensitized paper from, fresh?—**W. C.**

5689. **Itakit.**—Can good results be obtained with the "Itakit" hand-camera, price 12s. 6d.; is lens good enough?—**HORSESHOE**

5690. **Studio.**—Will any one who has had experience in building a studio give me particulars how to proceed, or the name of a book on studio building, such as would suit an amateur?—**STUDIO**

5691. **Inverness.**—I expect to be in this city for a day in the beginning of June? Will any brother amateur kindly tell me the best bits I can secure during a stay from 10 a.m. till 7 p.m.; also where I can change plates?—**G. BROWN**

5692. **Chester.**—As I contemplate spending a holiday in the neighbourhood of Chester, can anyone tell me which parts to visit with a view to photographing, also if I should have to obtain permission to photograph Hawarden Castle, the seat of the Right Hon. W. E. Gladstone, and if so from whom can it be obtained?—**R. H.**

5693. **Arran.**—I purpose spending ten days in the Isle of Arran in June, and shall be very grateful if any brother amateur who knows the island would tell me if it is a good hunting-ground for views. Can decent accommodation be had on reasonable terms, and is there a dark-room at any of the places?—**A. G. PATERSON**

## QUERIES UNANSWERED.

- April 1.—Nos. 5555, 5568, 5570, 5574, 5577, 5578.  
 " 8.—Nos. 5588, 5593, 5603, 5605, 5607, 5621.  
 " 15.—Nos. 5625, 5628, 5629.  
 " 22.—Nos. 5641.  
 " 29.—Nos. 5642, 5646, 5653.  
 May 6.—Nos. 5660, 5662.  
 " 13.—Nos. 5670, 5672, 5673, 5675.

## ANSWERS.

5691. **Isle of Man.**—There are many pretty bits in the island which can mostly be easily reached by train. The prettiest centre is perhaps Port Erin, near the grand scenery at the south end; it also has the advantage of being some distance from Douglas, where the most maddening of madding crowds makes the place hideous. Lodgings are to be found at Port Erin. Read the "Deemster" by Hall Caine.—**H. N. M.**

5690. **Hand-Camera.**—The "Adams" is a most excellent instrument for all-round work, having the advantage of detachable plate chamber; the workmanship is very good. Beck's camera has many good features—it does not, of course, cost as much as the Adams'.—**PRESTBURY**

5671. **Derby and Wales.**—"Byder" will find some charming spots at Bettws-y-coed. A few are: the Roman Bridge, Pandey Mill, Swallow Falls, The Fairy Glen. Also at Beddgelert there are some lovely bits: the pass of Aberglaslyn and round about. I visited there about two years since. Unfortunately, I had not my camera then.—**TRIX**

5674. **Hand-Camera.**—The lens of Talbot and Eamer's Guinea hand-camera is excellent; the negatives make good lantern-slides.—**PRESTBURY**

5675. **Exposure.**—One second if the light is good, no sun on the group, but plenty of light clouds about.—**ALFRED WATKINS**

5676. **Exposure Meter.**—I presume Blanche is not using state sensitive paper in the meter, as that might cause over-exposure. The standard subject number should not be altered to correct over exposure, but the f number should be raised. The instructions put the matter so definitely that I quote them. "Caution.—The f numbers (speed of plates) given are all calculated for fully-exposed, not 'pretty' negatives, the developer used having a minimum of alkali. Many workers, especially those using stronger develop-

pers, find that they give over-exposure, and therefore use f numbers one-half greater, and in some cases double, those given. The f number may be regarded as the regulator of the instrument, to be set fast or slow according to individual needs.—**ALFRED WATKINS**

5677. **Hand-Camera.**—Messrs Talbot and Eamer, Blackburn, make a good hand-camera, holding twelve quarter plates; at a guinea, it has a finder and self-setting shutter. I have just seen a new camera, on a similar principle by the same makers, which costs 25s.—this is of solid mahogany, polished or ebonyed, and has some improvements. The Guinea Camera is cloth covered. I have used one for some time with success.—**PRESTBURY**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED. AM. PHOT.**

**DOUGLAS S. BIRD.**—Mrs. E. Culverhouse, The Hundred Acres, Sutton, is the secretary of society.

**ELECTRA.**—We should choose the 6 in., working at f/8. It is very little use having so large an aperture. The shutter and lens combined is a very good outfit.

**MISS J. S. MAITLAND.**—A very fine result, but a little too deep a shadow on right side of face. Shade it in printing. Try and use a plain background. Entry form sent on, but June 20th is the date for portrait and figure study.

**H. J. L. J. MASSE.**—We fancy the marks are in the emulsion somehow, but we have never seen anything like this before; on the other hand, it may be air bells. What shall we do with the plate? (1) Sulphurous acid is used as the preservative. (2) Add water for slight over-exposure, but where very over-exposed, add a little bromide. (3) The fault is probably due to your negatives, but try the phosphate or tungstate bath.

**J. S. T.**—It strikes us that you are under-printing and that all the gold in your bath is exhausted. But if you omit the alum and lead, you would find you would get better tones.

**T. P.**—(1) We never attempt to make public the formula of any special developer prepared and sold by a firm. When a man has taken the trouble to find a formula and spends money on it by advertising, it is only fair he should have any benefit which may accrue from it. (2) Add 1 oz. of acid sulphite of soda to 4 oz. of hypo in solution. (3) For 10s. you can hardly expect to get a first-rate R.R. Detective lens, but probably the one you name will work as well as any other at the price. We have never seen it, so know nothing for or against it. (4) Geo. Rowney and Co., 64, Oxford Street, W.

**W. WINGE.**—(1) Very good, but a little dodging of the decoration round bottom of font would have improved it. (2) Would have been improved by still deeper printing. (3) Camera was all askew, matt-surface poor, negative wants intensifying or print over-printed. (4) The road is far too white, and lens does not cover well. (5) Matt-surface poor, otherwise good. (6) Bad, foreground utterly without interest, and though taken in sunshine, there is no sign of it in the print. (7) Over-toned. Certainly the combined bath has given you better results.

**W. E. W. HUME.**—1, Lothian Street; A. H. Baird, 15, Lothian Street; J. Buncle, 7, Hope Street; S. Keith, 69, S. Clerk Street; J. M. Turnbull, 6, Rose Street.

**W. S. BEARRIDGE.**—Gamboge or burnt sienna and carmine lake make good colours—they should be mixed with very thin gum water or ox-gall, and should dry in an hour easily. We should think you use the gum too thick.

**W. R. P.**—(1) There is no restriction on taking the outside from town, but to photograph in the park you have to obtain permission from Head Ranger. (2) Yes, you want a rather thin negative full of detail to enlarge from. (3) For Kew, apply to Superintendent. For Richmond, we think the L.C.C. will do; but we insert as queries.

**A. G. PATERSON.**—No article has appeared: we insert query.

**FIXER.**—Acid sulphite of sodium, 2 oz.; hypo, 8 oz.; water, 40 oz.; dissolve the hypo, and add the acid sulphite, which may be obtained under the name of Theonine, from Marion, 23, Soho Square, W.C. It acts very well for pyro-developed plates and films, clearing and hardening them.

**G. L. ANDERSON (Hong Kong).**—(The Blue Pool) Print over-exposed, wants an inch off foreground. (Picnic Party) Over-printed. (Out-door Group) Over-printed. (Chinese Group) Bromide, much over-developed. (The Jetty) Over-exposed. (Hong Kong Harbour) Over-printed. (Verandah) Negative wants intensifying, too flat. (The Godwins) Over-developed. (The Old Garden) Good. (St. Wain) Flat, negative wants intensifying. (Coal Boat) Good effect, very fine. (Study of Head) Very fine. (Group of Boat People) The best bromide print so far. (Lady with Dog) The best silver print. (Spanish Cruiser) Good. (St. Jerome) Paper slightly fogged. (A Copy) Very good. (Friend in Jap Costume) Good. Your

great fault is non-purity of the whites in bromide, due to over-exposure or over-development, and in silver, printing is too strong a light so that the prints are flat and poor. Although dirty, pyro would give you better results. Carry development with hydroquinone further. In future, always number your prints and keep a duplicate set. Your work is very fair on the whole, but you lose in printing. Your letter is most interesting, and we shall always be pleased to assist you as far as we can.

**H. W. W. YOUNG.**—We should certainly use the strength recommended by Mr. Hodges; we always use about this strength; the other is to our mind far too weak.

**W. D.**—Your failure lies in the plates on which you make your negatives, and not in the slide-making. Use a Mawson photo-mechanical plate for copying the prints and engravings, be careful not to over-expose, and carry development as far as you can without getting any deposit on the lines of the print or engraving; on the least sign of this, slip your plate at once into the fixing bath. Wash well after fixing, and then if not dense enough in the ground, intensify with Monckhoven's cyanide of silver intensifier, washing well between bleaching and re-blackening. Try this, and you will have no difficulty in getting good slides.

**DOZEY C.**—(1) You omit to state what is the developer used, but it strikes us as being caused by that in some way. Send up full details and particulars (2) You do not say the size of negative or print; this is important. (3) Bleach the negative in

|                   |        |
|-------------------|--------|
| Mercuric chloride | 40 gr. |
| Ammonium chloride | 40 "   |
| Water             | 10 oz. |

Wash well and place in 10 per cent. solution of ammonia.

**BLANCHE.**—(1) The stain is due to excess of alkali in the developer. The print is under-exposed. If the negatives are dense it is advisable to expose near the light, or else use a more rapid bromide paper to make the result less harsh. (2) The fault, we think, is yours. Send us up a negative and some cut paper, and we will try for you.

**P. R. S.**—No. 3. Most certainly.

**H. BRYANS.**—The only thing to do is to try and copy it, using a slow plate and a yellow screen; if you like to send us up print we will do our best for you.

**C. HUNT.**—We will try and find print and criticise.

**W. M.**—(1) Combination printing is allowed. (2) Clouds from commercial cloud negatives would disqualify print.

**INTERESTED.**—See note in "Our Views."

**H. J. L. J. M.**—The formula given will give you good tones for transparencies, but for negative work the one above it on same page is better.

**J. S. HENDERSON.**—We have used the instrument named for some time, and can therefore advise you to take it with you to India.

**TRIX.**—(1) The best thing to do is to retouch the face, or else paste tissue paper on the back of negative and work on that. (2) Will you expose three plates and send them up to us, sealing the box, and we will develop and return to you as guides.

**REX.**—Thanks for your letter. We utterly despair of satisfying all, and are glad to find even one or two like you who are content to abide by the decision arrived at.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence.

Every additional three words, one penny. The name and address of the sender must be paid for.

(A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**Background.**—Two backgrounds for sale, mounted rollers, canvas, 8 by 8, Leaver's style, 40s. the two; photographs 3 stamps.—3, Waverhill Road, Handsworth, Staffs.

**Bicycles, Tricycles, etc.**—New rapid Tricycle, good as new, £10, or will exchange for No. 4 Kodak or photographic apparatus.—Thorpstone, Brooklands, Manchester.

**Cameras, Lenses, etc.**—Stereoscopic camera, two Ross lenses, two double, one single slides, book shape, 35s.; Jamin rapid cabinet portrait lens, 28s.; Stirn's hand-camera, symmetrical lens to carry 25 films, 23s.; plated fittings; approval.—Lane, 135, London Road, Croydon.

**Finder.**—Sands and Hunter's adjustable finder, new, cost 12s., take 5s.—Attwood, Prestwood Road, Wolverhampton.

**Hand-Cameras, etc.**—Stirn's pocket camera with plates, quite new, 15s., or exchange.—H. Norman, Cheyne Walk, Northampton.

Kodak for sale, No. 4 Junior, but little used, and contains film for 20 exposures, price £8. To be seen at this office.—Thos. Evans, 3, Trinity Square.



Kodak, for sale. Folding Kodak, No. 5, complete, with strong folding tripod to suit, also waterproof canvas cases, with straps, for both Kodak and tripod, all new and in first-class order, cost £16. Can be seen at this office.—Address, James Keith, C.E., 57, Holborn Viaduct, London, E.C.

Rough stereoscopic hand-camera (Eureka model), iris diaphragms, cost £14, as good as new. What offers?—Cornish, 45, Brompton Square, S.W.

A Talmer hand-camera, quarter plate, for sale, good as new, cost 75s., sell for 35s.—J. F. C., 8, Valley Road, S.W.

Griffith's hand-camera, pneumatic fixtures, price 16s. 6d., cost 27s. 6d.—Farrow, 81, Bishopsgate Street.

**Lantern Slides.**—29 lantern slides, including views of London, Ashford, Notts, rivers Dee and Wye, and Braemar, 15s.—D., 10, Dunsford Villas, Merton Road, Wandsworth.

**Lenses, etc.**—12 by 10 single landscape lens, Waterhouse, as new, cost 45s., will take 27s.; or Wray 5 by 4 rapid rectilinear, iris diaphragm, unused, an exceptional opportunity, £2 2s.—A. H., office of this paper, 1, Creed Lane, E.C.

For sale, Dallmeyer 10 by 8 rapid rectilinear lens, in perfect condition, £5.—J. Charles Lang, Liskeard.

Lerebours whole-plate lens, 24 in. focus, equal to new, bargain, 14s.; approval on deposit.—B., 29, Myrtle Road, Leicester.

7 by 5 instantaneous rectilinear fitted with pneumatic shutter, splendid condition, 32s., bargain.—Avery, 45, Prince of Wales Road, Kentish Town.

**Negatives.**—Fifty quarter-plate instantaneous negatives, views of London, suitable for making lantern slides, 1s. each; specimen negative and list, 1s. 3d. post free.—J. Stabb, 154, Queen's Road, Finsbury.

**Sets.**—Disposal of quarter-plate outfit, genuine bargain, price 30s. per lot.—Makin, Sancerre, Ashton-under-Lane.

Complete £10 10s. half-plate photographic outfit, by Stereoscopic Company, condition as new, £5 5s.—C. W. White, Hillside, St. Germain's Road, Forest Hill, Kent.

Quarter 1892 Lancaster's Instantograph, including lens, with iris diaphragm, camera, stand, instantaneous shutter, two double slides, focusing glass, just new, 40s.—Butler, Peckington School, York.

10 by 8 Marjon's square bellows 8 guinea camera, two double dark slides, two carriers, whole plate, tripod and stand, £4 10s.; 12 by 10 Burr lens, R.R., iris diaphragm fitted to same, £3; complete outfit, half plate camera, R.R. lens, snap shutter, dishes, frames, all as new, £5 10s.; specimens of work.—Pollard, East View, Western Road, Cheltenham.

5 by 4 Kinnear long-extension camera by Horne, Eastman rollholder and three backs, Optimus R.R. lens light tripod stand, home-made hand-camera to suit lens, all good as new, £7.—Tilt, 88, Stockwell Park Road, S.W.

Oblong half-plate Instantograph camera, two double backs, lens, Instanto shutter, two-fold tripod, in good working order. Offers? Approval; deposit.—John Provan, 25, Woodside Street, Coatbridge, N.B.

Whole-plate Rayment's patent camera, three slides, Wray's R.R. lens, lengthening tube to use back combination Caldwell's shutter, to fit lens, all in perfect order, in leather hand-bag, also mahogany three-fold tripod; cost £13, price £13.—No. 291, 1, Creed Lane, E.C.

A 10 by 8 Watson's Acme camera, with turntable, three double backs, rollholder, extra fronts, carriers, tripod stand, and two cold leather cases, camera and backs brass-bound, all in first-class condition, price £29. Can be seen in the City by appointment.—No. 590, 1, Creed Lane, E.C.

Lancaster's quarter-plate camera, three dark slides, and every requisite, 27s. 6d.—A. W. Insley, 4, Grove Road, Brixton.

Optimus half-plate camera, turntable, three double backs, leather case, tripod, £5 12s. 6d. On view, 51, Lime Street, London.

**Shutters, etc.**—Sands and Hunter's patent instantaneous shutter, with pneumatic release, three circular diaphragms and adapting tubes to suit Dallmeyer's 11 in. focus R.R. lens, in capital condition, cost £3 take £1.—Atwood, Grosvenor Road, Wolverhampton.

Gerry double flap shutter, whole plate or 10 by 8, complete in case, new, 17s. 6d.—A. H., office of this paper, 1, Creed Lane, E.C.

**Sundries.**—For sale, leather camera case, 9 in. by 4 1/2 in. by 9 1/2 in. inside, cost 35s. new. What offers? Would exchange for cabinet burnisher.—29, Barry Road, Dulwich.

Wall's "Dictionary of Photography" and half-plate zinc vignetter, 1s. 2d.; Burton's "Modern Photography," printing frame, and eight Tylar's light-tight bags, quarter-plate, 1s.; AMATEUR PHOTOGRAPHER, 1891, weekly parts, 3s.—H., 1, St. George's Villas, Park Road, Norbiton.

AMATEUR PHOTOGRAPHER, 1889, 1890, 1891, 4s. 6d. lot.—Hewerton, Hill Top Lodge, Ulverston.

Quarter-plate Merveilleux camera, lens, slide, and stand, new and perfect, 17s. 6d.; washable background, 72 by 50, on rollers, 3s. 6d.; Lancaster's enlarging lantern, 5 in. condenser, 45s.; large print-washing machine, cost 25s., price 7. 6d. Exchange St. Benard.—M. Newhouse, 90, Victor a Terrace, Lancaster.

**Tripod.**—Shew's bamboo walking-stick tripod for sale, or exchange landscape double lens for Lancaster's

half-plate Instantograph.—John Stewart, Greenhill, Paisley.

## WANTED.

**Cameras, etc.**—Wanted, cheap, Underwood's quarter-plate Convention or Medal camera.—Burrows, Post Office, Cheadle, Cheshire.

**Cameras, Lenses, etc.**—Wanted, half-plate camera and lens.—E. Smith, 18, Pitt Street, Norwich.

Camera (half-plate or 7 by 5), lens, and stand, cheap for cash.—P., 223, Southgate Road, N.

**Hand-Cameras, etc.**—Wanted, hand-camera, well-known make, in good condition; approval.—Howe, Carlton Chambers, Baldwin Street, Bristol.

**Lenses, etc.**—Wanted, a 5 by 4 and 7 by 5 wide-angle rectilinear 1 ns; state price and particulars.—Dr. Finny, Norbiton.

**Sets.**—Whole-plate or 10 by 8 complete outfit wanted; must be good maker and cheap.—J. W. Thorp, Knutsford.

**Shutter.**—Wanted, 1 1/2 in. ever-set shutter; state all dimensions.—W. Perks, Cleveland, Walthamstow.

**Sundries.**—Stereoscopic slides; also plate and print washer, cheap; particulars.—Chas. Stone, Pinner.

**Tripod.**—Wanted, walking-stick stand, cheap for cash; send length and width.—H. B. Dry, 22, Richmond Terrace, Clapham.

Cyclist's half-plate tripod wanted, light, rigid.—Gamble, 19, College Avenue, Leicester.

**Photographic Appliances.**—Accessories and apparatus by all the following makers are always in stock; call and inspect any article you may wish to purchase and compare with different makers' goods, and you will be able to possess the best and most suitable article for your purpose. Special large selections of Lancaster's goods, all Optimus cameras or lenses, Underwood's cameras, Fallowfield's Hand cameras, Talmer Hand cameras, Ideal Hand cameras, etc. All makers' plates, Ilford plates and papers, Paget plates, Thomas's plates, Fry's plates, Mawson's plates, silver papers, bags, cases, valises, 2-fold, 3-fold, and 4-fold stands, dishes, printing frames, etc., etc. Write for list to Manager, City Sale and Exchange, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium).

**Cameras! Cameras! Cameras! Lenses!** Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Hand Cameras.**—Beck's hand-camera, covered black morocco leather, fitted Beck's best rapid rectilinear lens, iris stops, Beck Newman time and instantaneous shutter, carries 6 double slides for 12 quarter-plates, two sunk finders, warranted as new, take £7 7s., cost £12 12s.; Collins hand-camera, covered best Russia leather, finest quality rapid rectilinear detective, by Tayor and Hobon, iris stops, two sunk finders, carries 6 double slides for 12 quarter-plates, warranted as new, £6 10s., cost £13 13s.; Houghton's Automatic hand-camera, 12 quarter plates in case, rapid rectilinear lens, rotating stops, two finders, as new, £4 10s. lowest; London Stereoscopic Company's Despatch detective, covered black leather, fitted Stereoscopic Company's rapid rectilinear lens, Newman's shutter, two finders, three double slides, rack focussing, size quarter-plate, as new, take £6 6s., cost £10 10s.; Optimus magazine hand-camera, carries twelve quarter-plates, two finders, Optimus rapid rectilinear lens, as new, £4 15s., lowest. All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Lenses.**—For sale, 15 by 12 Optimus wide angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; Ross whole-plate actinic triplet, for large heads or groups, Waterhouse stops, take £4 15s.; whole-plate Optimus rapid rectilinear (by "Optimus") as new, guaranteed, grand definition, covers well to edges, £3 10s.; whole-plate Lancaster's Silver Ring rectilinear lens, quite new, grand definition, covers 9 by 7 well, works 1/10, take 60s.; whole-plate True-view lens by Charterhouse Stores, iris stop, movable hood, quite new, take 65s.; 8 by 5 Ross's actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; half-plate rapid rectilinear lens by Wood, Lord Street, Liverpool, movable hoods, works 1/8, quite new, 25s. lowest; Portrait lens, cabinet size, rack focussing, finest order, take 17s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; Ross quarter-plate landscape lens, thoro' order, splendid definition, take 15s.; quarter-plate portrait lens, by Rooker, of Newington, rack focus, best order, take 10s. 6d.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse stops, cover 5 by 4, focus 5 1/2 in., quite new,

take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Cameras.**—Whole-plate Optimus Rayment camera, all latest movements, best leather bellows, reversing back, etc., fitted Lancaster's Silver Ring rectilinear lens, iris stops, three double slides, best Spanish mahogany fitted three-fold stand, £9 15s. lowest, cost £14, as new; Lancaster's whole-plate 1891 Instantograph, as new, all improvements, including camera, Instantograph lens, iris stops, instantaneous shutter, double slide, and folding stand, take £5 5s.; Dallmeyer Stereoscopic camera, rack focussing swing back, three double and one single slides, a mastery of workmanship, fitted Ross's actinic doublet lens, rotating stops, 5 1/2 in. focus, £7 10s., a rare bargain; half-plate finest Spanish mahogany camera, rack focussing, for wide-angle, finest leather bellows, rapid rectilinear lens, iris stops, by Mallett, three double slides and three-fold ash stand, as new, take £4 17s. 6d., worth £10 10s.; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s., worth £5; Lancaster's stereoscopic Instantograph, as new, two double slides, 6 1/2 by 3 1/4 Instantograph lenses, instantaneous shutter and folding stand, take £3 17s. 6d., quarter-plate Le Meritote set complete, camera, lens, slide and stand, 21s. lowest; also quarter-plate Instantograph set, as new, including camera, two slides, lens, shutter, folding stand, all latest improvements, 37s. 6d. lowest; Watson's quarter-plate best camera, rising, falling, and cross fronts, best leather bellows, three double dark slides, rapid rectilinear lens, Waterhouse stops, folding stand, and Kershaw shutter, as new, 70s. lowest; Underwood's quarter Instanto set, complete, good order, 21s. All above warranted in every detail. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

LADY MURRAY will be pleased to send a specimen of her Sensitised Paper for trial, free and post paid, to any address in the world. It will be found to be absolutely free from all the usual faults of blistering, spots, meanness, smell, etc., to keep any length of time, to be of uniform quality, to tone and print rapidly, and to stand any climate in the world. Indispensable for India and the Colonies.—Address, "Amateur," Lady Murray, Chichester Street, London, W.

MISS F. E. CROSS, Artist and Retoucher. Negatives Retouched free, as specimen. Price list on application.—2, Rail Road, Hanover Park, S.E.

LESSONS IN PHOTOGRAPHY AND RETOUCHING.  
T. PACEY, 370, UXBIDGE ROAD, W.

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# The AMATEUR PHOTOGRAPHER

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FRIDAY, MAY 27, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare.*

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock; and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

**OUR VIEWS.**—City and Guilds Technological Examination—How to tell when a Print is Fixed—Woolwich and District Photographic Society—Rochdale Camera Club—"Optimus" Competition Prizes—Loss of MSS.

**LEADERS.**—Ives's Process of Heliography—Notes on Enlarging.  
**LETTERS.**—A Thief (Adams and Co.)—Portfolio Club (Hughes)—The Blister Fiend (Scott. Sen. Paper Co., W. Dunne, Anti-Blister)—An Improved Ball and Socket (Olipphant)—Permission to Photograph.

**REVIEWS.**—First Principles of Photography (Leaper)—Practical Enlarging (Hodges)—Beginners' Guide—On Choice and Use of Lenses (Dallmeyer)—Art of Retouching (Hubert)—Impressions Photographiques aux Encres Grasses (Trubart)—Traité Pratique du Developpement (Londe).

**ARTICLES.**—Elementary Photography (Hodges)—Hints to Beginners (Novocastriensis)—A Universal Hand-Camera (Bruno)—With a Camera in Spain (King)—The Eastman Company—Bromide Enlarging (Pack).

**HOLIDAY RESORTS.**—Weymouth.

**CATALOGUES.**—Fry—Lancaster—Moore.

**APPARATUS.**—Actinograph (Marion)—Edwards' Paper—Lady Murray's Paper—Iroid Lens and Shutter (Dollond).

**CITY AND GUILDS PRACTICAL EXAMINATION.**

**SOCIETIES' MEETINGS.**—Belfast—Birkenhead—Brixton—Great Yarmouth—Ireland—Kensington—Leeds—Lewisham—North London—North Middlesex—Putney—Stockport—Tyneside—Wigan—Woolwich Polytechnic.

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

### TERMS OF SUBSCRIPTION—

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**TRADE ADVERTISEMENTS** are received up to Tuesday morning.

**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE AND EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

"Amateur Photographer" Monthly Competition No. 36.—  
"SEA PIECES AND RIVER SCENERY." Latest day, May 30th  
—Prizes: Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, June 17th.)

WE have already published the questions set in the theoretical part of the Examination in Photography for the City and Guilds Institute, and now publish the practical tests. With regard to this examination, we have received a verbal report as to the manner in which it is conducted, and some reform is sadly needed. In the questions set for the Ordinary Grade the following occurs: (4) Describe the process of fixing a print, stating how you would ascertain whether it was complete? We should like to know how to answer the latter part of the question. At the London and Provincial Association last week this question was brought up, and the examiner was written to and asked what he would suggest, as there was no certain test known. Looking through the print is not reliable.

In the practical examination we hear that several competitors were allowed in the dark-rooms at once; there was no restriction on their talking or helping one another, and the arrangements were careless in the extreme. Again, the first test in the honours grade is, "Make a negative suitable for photo-lithography of the enclosed print on a quarter-plate." The plate provided was of ordinary rapidity—certainly unsuitable for the purpose, slow lantern emulsions or photo-mechanical plates being the only ones to use. Again for question three, "Test the relative sensitiveness of the two plates enclosed, marked A and B; send up the plates after their trial, and explain how you arrived at the results." Merely the two plates were handed to the competitor; no sensitometer, no graduated screen, etc. It is quite possible to test the sensitiveness of two plates without any other aid beyond the camera, but this premises a standard light, and can then only be approximate.

We hear that two new examiners have been appointed, and this is the first specimen of their method of conducting the examination. We have been asked, what is the use of this examination? And we cannot say, when conducted in this loose and careless manner.

SINCE writing the above, we have received the following communication from Mr. R. P. Drage, Hon. Secretary of the London and Provincial Photographic Association:—

### FIXING OF SILVER PRINTS.

By Lionel Clark.

I have your letter asking for my opinion as to the best method of ascertaining the period when a silver print may be considered to be completely fixed. I remember making some experiments in this direction some time ago, but, unfortunately, cannot lay my hands on my notes at the present moment. However, I think I can recall them to mind pretty accurately.

The method generally recommended in the text-books is to examine the print by transmitted light and see whether all patches or blotches



have disappeared, but I cannot regard this as at all a satisfactory way. It is true that with paper of light weight, say the ordinary "Rive," the action of the hypo on the silver chloride is discernible, the proof behaving somewhat like an ordinary negative, but is, of course, much feebler in appearance. In fact, so feeble is the opacity that if the paper is at all thick, it is difficult to follow the action of the hypo even when designedly applied locally, and with really thick papers it is quite impossible, especially as many of these papers will be found to have in them patches of coagulated sizing that would entirely mislead one. Although, therefore, an instructive experiment, I regard the transmitted light test as of no practical value whatever. In fact, the aspect of the print by reflected light is equally as good a test, as the surface colour of the print will at once change under the action of hypo. Of course, I am aware that this change is entirely on the surface, and, therefore, only shows the difference between the action of hypo and no hypo, but this is exactly what the transmitted test does also; the difference is so feeble that it is really only between those parts that have been touched with hypo and those that have not that there is any distinction marked enough to be of use. Now tests such as these are, of course, of no value whatever, as fixing a print depends not only on dissolving out the silver chloride, but at the same time in also dissolving by an excess of hypo, the hyposulphite of silver formed in the print, and this salt being in solution, is, of course, quite indiscernible either by reflected or transmitted light. And this hyposulphite of silver is unfortunately the very point that causes all the damage in non-fixed negatives, as this insoluble salt rapidly splits up and forms a silver sulphide; the characteristic yellowy-brown stain giving the print the appearance of having been scorched, is probably too well known to all photographers.

The proper fixation of our prints is, however, so important a matter that some experimenting in this direction might well be undertaken. I cannot now remember whether I actually did carry out the experiment, or whether I merely intended to, but my idea was to utilise the well-known test for ascertaining whether paper is properly sensitised (that is, the application of a solution of bichromate of potash to the back of the print), for the similar task of discovering whether there was any silver left in it after fixing; the action, of course, being the formation of the highly-coloured chromate of silver. One of the sulphurets of ammonium or potassium might also be used, in this case forming locally the same silver sulphide, that, allowed to form all over the improperly-fixed print, eventually destroys it; indeed, it is not improbable that any acid solution applied to the unfixed print would decompose the silver hyposulphite sufficiently to form the brown silver sulphuret. But nevertheless, although interesting as experiments, I cannot look on such tests as ever being of practical value. As a rule, they either act too completely, and show traces that would be in practice quite innocuous, or else they act too coarsely; in addition to this, they only show the condition of the one particular spot to which they are applied, unless, of course, the whole print is submerged, in which case the test is something like striking the whole of a box of matches to see whether they are good or not, or rubbing writing to see whether it is dry. Applied to the edges of a print, as such a test naturally would be, it might give quite misleading results, as I find that the most frequent cause of imperfect fixation arises from the prints clinging together in the bath, and thus preventing the hypo getting all round them; in such a case it is perfectly obvious that a test applied to the edges would give entirely erroneous results, and it is for this reason that in practice I never by any chance make use of them.

However, the necessity of perfect fixing is so important that in practice I take great care in this operation, making assurance sure by always passing the prints through a second and fresh bath of hypo. For the amateur, who is only printing at intervals, and who therefore does not keep a stock bath, there is no better way, and it ensures, if the bath is freshly made up, the presence of a sufficient quantity of hypo in the print; but with the professional, who keeps a stock bath continually going, the fact alone of leaving the prints a sufficient time in the bath is not sufficient, as it may very well happen that such a bath has become quite exhausted without his perceiving it. But in the case of this gentleman it would evidently be quite impracticable for him to test each separate print by any of the former methods mentioned, and he would have really to rely on a test proof, so that even if he did take the trouble he would by no means be certain that it insured the fixation of his prints as thoroughly as he desired.

However, as I do not believe in the practical value of any of the above tests, except of course as a scientific experiment, I should give it as my opinion that the most practical method of ensuring perfect fixation is to carry on the fixing for a specified time, turning the prints over once or twice during the operation, and in the case of a stock bath take the very simple precaution of ascertaining that the hypo is in an active state. As a matter of fact this can be done continuously and without any preparation by simply watching the

aspect of the proofs as they are placed in the bath; if the hypo is active, as every one is aware, they will at once change colour, turning of a much redder colour (owing, of course, to the dissolving out of the soluble blue sub-chloride), and the rate at which this change goes on will give a rough indication of the working power of the hypo; the proof is neither delicate nor conclusive, but if the print does not change colour or does so very slowly, it is a gentle hint to the operator to refresh his hypo bath. Of course, in those cases where it is customary to treat the prints with salt before fixing, and where therefore the change of colour in the hypo is very slight or entirely absent, the usually recommended test of looking through the print may be reverted to, and the result will be more certain if a small piece of uniformly exposed paper, such as a slip off the timings of the prints, be used. In this case, if the surface be not too solarised there is no difficulty in seeing the line of demarcation between the fixed and unfixed portions, either by reflected or transmitted light. To those who may desire a more accurate and scientific method, I would suggest a careful measurement by means of a graduated pipette of the amount of silver chloride that the hypo under examination could dissolve.

I would like here to mention one point that I have noticed in fixing prints, and that is that if strong, or indeed, weak hypo be applied locally, the print will show a difference in opacity and also in surface colour at these spots, and these marks will be found to be irremovable even after a lengthy immersion in strong hypo. I do not know whether these spots represent insoluble portions, or whether it is merely a sort of coagulation of the albumen at these points, but would mark the fact as worthy of some future investigation.

I am afraid that I shall not have been able to add much new light to the question at present before your society, but owing to the press of other business, I have been entirely out of photography for some time back, and therefore find some difficulty in furbishing up my memory and notes of former experiments.

—♦♦♦—

WE regret to hear that the Woolwich and District Photographic Society has been disbanded, but on the other hand a photographic section has been formed in connection with the Woolwich Polytechnic. Any of our readers who are desirous of joining should immediately send in their names to Mr. W. Dawes, the Hon. Secretary.

—♦♦♦—

MESSRS. W. AND S. INGHAM, Hon. Secretaries of the Rochdale Camera Club, have sent us a very good little quarter-plate print of a series of views surrounding their own portraits. The whole is very well done and very effective.

—♦♦♦—

WE have had the opportunity of inspecting the prizes which are offered by Messrs. Perken, Son, and Rayment for the "Optimus" 100 Guinea Competition, and certainly the prizes are all of magnificent value, and so arranged that the winners may make their choice from the following sets of instruments known as the

#### "PRIZE SERIES."

*Set A, value £15.*—10 by 8 Rayment camera and two double dark slides; 10 by 8 "Optimus" rapid view lens, tripod stand, focussing magnifier, and focussing cloth, collapsing waterproof case.

*Set B, value £15.*—8½ by 6½ Rayment camera and three double dark slides; 8½ by 6½ "Optimus" rapid rectilinear lens, tripod stand, focussing magnifier and focussing cloth, leather case, with lock and key.

*Set C, value £15.*—6½ by 4½ Rayment camera and three double dark slides; 6½ by 4½ "Optimus" Euryscope lens, plunge shutter, 4-fold tripod, focussing magnifier, and focussing cloth, waterproof case, with lock and key.

*Set D, value £15.*—3½ by 3½ "Optimus" hand or detective camera, including six dark slides; 3½ by 3½ "Optimus" rapid Euryscope lens and shutter; 3½ by 3½ "Optimus" enlarging apparatus, ornamental mahogany body, lined with metal, patent focussing adjustment, with 6 in. compound condenser, also a 4 in. for the projection of lantern slides.

*Set E, value £15.*—"Optimus" Scout field glass, with aluminium body; Ubique hand-camera with single view lens, shutter, and three double dark slides; Photographoscope, a very handsome table ornament, having mechanical contrivance for displaying a number of cabinet pictures one after the other in endless rotation.

*Set F, value £15 (One Set only).*—Superior aluminium telescope.



WE regret to state that in consequence of the carelessness of an office boy, a quantity of MSS. was unfortunately lost last week. As far as possible we have endeavoured to make good the same, but we shall be glad if any of our readers who do not see any reply to letters, etc., which they have sent us will kindly repeat them, or let us know, that we may find the original.

#### IVES' PROCESS OF HELIOCHROMY.

Mr. F. E. Ives delivered the second of his lectures on "Photography in the Colours of Nature" on the 17th inst., and first explained in detail the principles upon which the three coloured screens which he uses in producing his triplicate negative are selected, illustrating the theory by means of magic-lantern views of the spectrum; but the greater part of his lecture was devoted to the mechanical aspects of his invention—in particular, the means by which the three images are superimposed. With the subject of the production of permanent colour prints by his process Mr. Ives dealt very briefly; indeed, he frankly admitted that such prints could only be produced by a complicated process which required a considerable scientific knowledge of the laws of colour sensation on the part of the operator, and at a cost which precluded the possibility of profitable manufacture. He claimed, however, that by the application of his invention to the heliochromoscope he had actually solved the problem of photography in the colours of nature, since the illusion thus produced was more perfect than could possibly be obtained by means of a photographic print. He promised that his camera, in which the triple negative is produced on a single sensitised plate by means of a single lens with a single exposure, would shortly be obtainable everywhere by amateurs, who would thus be enabled by a process as simple as that of the production of an ordinary photograph to make a transparency, which, on being placed in position in the heliochromoscope or behind the triple objective of a specially fitted magic-lantern, would perfectly reproduce the colours of nature.

In conclusion, Mr. Ives showed by means of the magic-lantern some half-a-dozen views in Yellowstone Park, and one or two portraits, the colours of which were wonderfully natural, though the lecturer explained that the tints could only be reproduced in their full brilliancy by a lantern illuminated by sunlight or the electric light. A photograph of flowers of most brilliant hues was shown in the heliochromoscope, and this attracted considerable attention, and was, perhaps, the most successful exhibit shown, and was taken on an Edwards's Isochromatic plate.

#### NOTES ON ENLARGING.—XI.

##### ENLARGEMENTS ON OPAL AND GLASS.—ENLARGED NEGATIVES.

ENLARGING on to opal glass or dry plates presents no difficulties after enlarging upon paper has been mastered, greater care only being necessary to avoid mistakes and failures, as the cost of opals or dry plates is considerably more than with bromide paper.

Most manufacturers include with each box of opals trial sheets of bromide paper, which may be used for test exposures, as described in an earlier chapter. For enlarging on dry plates the slowest brand possible should be obtained, the so called lantern 'plate' being the most suitable. All other operations, of developing, clearing, and fixing, are precisely the same, with one slight exception. Enlargements on paper are usually seen by reflected light, whereas enlargements on opal may be examined by reflected or transmitted light, and enlargements on dry plates are always viewed by transmitted light. For this reason enlargements on opal and larger transparencies on dry plates must be developed till they look dense enough by transmitted light, and they will probably look "bunged up" in the shadows by reflected light, therefore their density must be judged by holding them up to the dark-room window or lamp, just as with negatives. When making large transparencies on dry plates,

by enlarging, we are enabled to use both pyrogallol and quinol, and obtain a warmer tone than when they have to be examined by reflected light. Two formulæ are given in the Appendix for this special purpose, the resulting image being a fine purple by transmitted, but a hideous brown by reflected light. Other methods of obtaining warmer tones will be given later on.

When many enlarged prints from one negative are required it will often be found advantageous to make an enlarged negative and print by contact from this. For this purpose it is obvious that a small positive must first be made by contact printing from the original negative, and then the enlarged negative from this in the usual way. The best method of making the small negative is a matter of dispute, some preferring the carbon process, others the ordinary lantern or gelatino-bromide or chloride plate. The latter plan will certainly be found the more convenient for amateur workers. The small positive may be made on any lantern plate and developed with any developer. Care should be taken to make it as perfect as possible, and all small imperfections, etc., should be retouched or spotted out on the positive. By making a cloud positive on a separate slide, and using it as a cover glass like a lantern slide, clouds may be obtained in the enlarged negative. The enlarged negative may, of course, be developed with any developing agents; but in this, as when developing the small positive, care should be taken to keep the whole rather thin, a delicate, full of detail negative and positive, giving the best results. The large negative may also obviously be made by using a negative in the first instance, and obtaining a positive by enlargement, and then obtaining a negative from this by contact printing. Celluloid coated with gelatino-bromide emulsion may also be obtained commercially; and this may be utilised either for positives, transparencies, or negatives, the necessary treatment being precisely the same as indicated above for paper, opals, or plates, according to the method of viewing the same for which the enlargement is required.

#### Letters to the Editor.

##### A THIEF.

SIR,—We would respectfully solicit your help in trying to trace a thief or thieves, who, unfortunately, seem very successful in purloining lenses from us.

We have, of late, missed quite a number, but unfortunately have no clue whereby to trace same. A few days back, however, a Wray lens 5 inch R.R. with Waterhouse stops was taken, and this lens bears the number of 4,968.

We think probably that by means of your extensive circulation this may meet the eye of some one who has purchased the lens. If so, we trust they will afford us any information that may lead to the detection of the thief, and we need hardly add that we shall be pleased to reward them for their trouble, upon conviction.—Yours, etc.,

ADAMS AND CO.

\* \* \* \*

##### PORTFOLIO CLUB.

SIR,—I have a few vacancies in my "Photo Portfolio Club," and will be obliged if you will publish this letter so that amateurs wishing to join may communicate with me. The following are the principal rules:—

1. The Club is open to both ladies and gentlemen.
2. The subscription is 1s. per annum.
3. Each member sends one unmounted print to portfolio every month for criticism.
4. The portfolio to be retained by each member two days, and then sent to next on list.
5. A portfolio is sent out by the Hon. Secretary every month.
6. A book is sent with the portfolio, into which members write particulars of their methods of working different processes, etc. The number of members being limited, early replies are necessary to insure a place in club.—Yours faithfully,

E. J. HUGHES.



## THE BLISTER FIEND.

SIR,—We shall feel obliged to you if you will kindly permit us through the medium of your paper to inform your numerous clients that for some time we have been manufacturing an albumenized sensitised paper which we *guarantee not to blister*. As this subject is at present being discussed in your columns, we take this opportunity of sending you a few sheets for experimental purposes.—Yours faithfully,

THE SCOTTISH SEN. PAPER CO.

SIR,—Before you bring the above to a close, I should like to say a word or two upon the subject. It is a long time since I first became acquainted with blistered prints, and very seldom have they proved at all troublesome. I find very often that the prints become almost covered with very small blisters, usually in the washing after the fixing bath, but occasionally during fixing. When the washing is completed, I simply lift them out of the water and place between sheets of tissue paper, paying not the slightest attention to the blisters. During the drying process the blisters entirely disappear, therefore I do not experience the least inconvenience.

I have often wondered what the cause could be, for the paper I use and the treatment I give is always the same, so that if I tone, say, twelve prints, half of them will be alright, and the other half, as I have stated above, covered with small blisters. In the case of large blisters, which I occasionally experience, I am not so fortunate. As a rule, I throw the print on one side as worthless.—Yours, etc.,

WM. DUNNE.

SIR,—In reference to your correspondent, "P.'s" observations on the possible cause of my success in avoiding blisters at one time and not at another being due to "well-manufactured paper," and the reverse, on the respective occasions, I may say that I toned a batch of prints some time ago, which consisted partly of Blackfriars Sensitising Co.'s paper and partly of Scholzig's. Now, I assume the quality of the paper is beyond question, yet strange to say these were the only prints which were blistered, and that despite the use of the salt and ammonia solution; therefore I fear your correspondent's inferences are not quite tenable.

I was not aware my precautionary measure was adopted by Messrs. Edwards and Co. or any other firm, and instructions to treat their paper thus issued with it, until I read their letter in your last issue. That, however, is unimportant, but the intimation they therein make as to the special paper they are now sensitising which "not only does not blister, but that it cannot be made to do so" is a boon I think no one will undervalue, if it but justifies what is claimed for it. Most of your correspondents will anxiously await your promised report of it in your next issue, and none of them more than—Yours, etc.,

ANTI-BLISTER.

\* \* \* \*

## AN IMPROVED BALL AND SOCKET.

SIR,—I send for your notice a new form of universal-joint tripod head. I may remind you that in the old form the ball screws into a plate in the camera, and I found that this screw was always coming loose when one wanted to turn the camera round. In the new form the ball is attached to the tripod head, and one screw only is needed. The plate to attach to the camera might project rather less than in the model sent. I send the old triangle also to show you how I have economised space, so as to bring the bamboos close together all the way up when the stand is closed. Any maker is welcome to the idea.—Yours truly,

J. C. OLIPHANT.

\* \* \* \*

## PERMISSION TO PHOTOGRAPH.

SIR,—Like many other amateurs, I have a great love for architecture, especially our cathedrals, and have spent much time in photographing their interiors. Permission is readily granted, but there was one incident which appears to me to involve a principle of great interest and importance to us. At Winchester the sole right to photograph the magnificent great screen has been disposed of for a consideration to a local professional. Now I do not wish to complain of one who is invariably so courteous and affable as the Dean of Winchester, but if a Dean has a right to

copyright a portion of his cathedral, why not the whole of it? and what is to prevent other Deans following suit, so that we may find ourselves shut out from the most beautiful and interesting of our national monuments? The object in the Winchester case was to raise funds for the costly restoration of the said screen; any other cathedral where expensive works are contemplated or in progress may in like manner sell the sole right to photograph; and I should be glad to know whether anything could be done to prevent it, as I believe a Dean is nearly autocratic in his cathedral.—Yours, etc.,

ARCHITECTURE.

## Reviews.

*The First Principles of Photography.* By Clement J. Leaper, F.C.S. Published by Iliffe and Son, 3, St. Bride Street, E.C. Price 5s.

The author describes this as "an elementary treatise on the scientific principles upon which practical photography depends," and certainly the work fulfils its mission. It is, however, too strong meat for the tyro or beginner; but for the more advanced worker who wishes to penetrate more deeply into the science underlying the practical portion of his work, and to the student of the City and Guilds of London Institute, the book will be useful. The author makes a very curious slip on page 182 when speaking of orthochromatic work, for he ascribes to Eder a work called "La Photographie des Objets Colores, avec leur Valeur Reelle," whereas Eder always writes in German, and the said work is really a French translation of Dr. H. W. Vogel's original German work "Die Photographie farbiger Gegenstände in den richtigen Tonverhältnissen." Taking it on the whole, the work is free from errors.

*Practical Enlarging.* By John A. Hodges. Published by Iliffe and Son, 3, St. Bride Street, E.C. Price 1s.

Mr. Hodges has given us in a concise and practical form the general information upon the subject of enlarging, and one regrets that the work is not more complete. The details of the illuminants, methods of constructing home-made apparatus are very complete, and in fact takes up fully two-thirds of the book, the remainder being devoted to actual process. The work is practical and the information given the result of experience.

*Beginners' Guide to Photography.* Published by Perken, Son, and Rayment, 99, Hatton Garden, E.C. Price 6d.

Possibly of all elementary handbooks this has reached the largest circulation of any, the present edition being the fourth and thirty-second thousand. It is plainly written and gives good sound advice on the choice of apparatus and the first steps in practice.

*On the Choice and Use of Photographic Lenses.* By J. H. Dallmeyer, F.R.A.S. Published by Dallmeyer, 25, Newman Street, Oxford Street, W. Price 1s.

This little work, which has now reached its seventh thousand, is so well known as a clear and concise guide on the subjects of which it treats that we need say no more than its usefulness is still further enhanced by a complete table giving comparative exposures and relative rapidities of different lenses by this well-known optician.

*The Art of Retouching.* By J. Hubert. Published by Hazell, Watson, and Viney, Ltd., 1, Creed Lane, Ludgate Hill, E.C. Price 1s.

For some time this handy little guide to retouching has been out of print, and we are therefore glad to be able to announce the issue of a second edition by our publishers. After many years' experience as a professional retoucher the author can be relied on to give us valuable practical assistance.

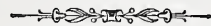
*Impressions Photographiques aux Encres Grasses.* By E. Trubart. Published by Gauthier Villars et Fils, 55, Quai des Grands Augustins, Paris.

Each year sees increased attention given to the photo-mechanical processes even by amateurs, and this work treating so fully of collotype will be very welcome. It is very carefully written and especially for amateurs. The production of negatives both by the wet and dry plate is described, the reversal of the film, and the subsequent operations of preparing and inking the plates and pulling proofs, where necessary explanatory figures are introduced.



*Traite Pratique du Developpement.* By Albert Londe. Second Edition. Published by Gauthier Villars et Fils, 55, Quai des Grands Augustins, Paris.

M. Londe has given us a very well written practical treatise containing all the necessary considerations to be observed in developing with pyro, ferrous oxalate, quinol, eikonogen, and the later developer paramidophenol. Very clear directions are included as to modification of the constituents of the developer to obtain various different results and to suit different subjects, and collotypes are included, showing the faults in the negatives themselves and the prints from them caused by errors in developing.



## Catalogues.

THE FRY MANUFACTURING COMPANY, 5 Chandos Street, Charing Cross, W.

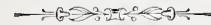
A useful and complete catalogue of the well-known productions of this firm. Included also are specimens of work on "Roughest" Argentotype and Soltype papers, one of the latter being from a shot with a Griffiths' guinea hand-camera, and the result speaks well both for the camera and the printing process. The Fry Manufacturing Company are the wholesale London agents for all Griffiths' apparatus.

J. LANCASTER AND SON, Colmore Row, Birmingham. Price 4d.

Messrs. Lancaster's catalogue of seventy odd pages is devoted solely to goods of their own manufacture and, like their goods, is handsomely got up and well turned out. We note that the firm are now utilising aluminium for camera fittings, thus reducing the weight considerably, and at a reasonable price too.

J. W. MOORE, Chemist, 7, Market Square, Hanley.

A very well got up price list containing good illustrations and all requisites for photography, and of the apparatus of the leading manufacturers for whom Mr. Moore holds the agency.



## Apparatus.

### THE ACTINOGRAPH.

MESSRS. MARION AND Co. inform us that Messrs. Hurter and Driffield have finished their calculations of light scales of other latitudes for the above instrument, and it will be shortly ready for delivery for any part of the world. The following are the latitudes calculated for:—

|                 |            |
|-----------------|------------|
| 62° 30' north.  | 47° south. |
| 57° 30' "       | 40° "      |
| 52° 30' "       | 30° "      |
| 47° 30' "       | 20° "      |
| 40° "           | 10° "      |
| 30° "           |            |
| 20° "           |            |
| 0° the Equator. |            |

### EDWARDS' XL. SENSITISED PAPER.

We have tried the sample of special paper sent by Messrs. B. J. Edwards and Co., of The Grove, Hackney, and although every endeavour was made to obtain blisters we were unable to do so. It prints quickly and tones readily with very little gold, and the special instructions issued for its use are as follows:—

**TONING.**—After removal from the printing frame, well wash the prints in several changes of water, moving them about continually and separating them during the operation; finally rinse in clean water and place them one at a time, face downward, in a toning bath. The following is recommended:—

|        |                  |     |     |     |         |
|--------|------------------|-----|-----|-----|---------|
| No. 1. | Chloride of gold | ... | ... | ... | 15 gr.  |
|        | Water            | ... | ... | ... | 2 oz.   |
| No. 2. | Acetate of soda  | ... | ... | ... | 240 gr. |
|        | Water            | ... | ... | ... | 80 oz.  |

Mix the above by pouring No. 1 into No. 2 and allow the bath so made to stand twelve hours before use. This bath can be used over again for a long time, being continually renewed by adding stock solution of gold No. 1. as above, at the rate of half a grain of gold for each whole sheet of paper, half an hour before the bath is required for use; in cold, weather the bath should be slightly

warmed. The print should be toned to the colour required. Remove each print as soon as it is sufficiently toned, and immerse it in the following solution:—

|       |             |     |     |     |          |
|-------|-------------|-----|-----|-----|----------|
| No. 3 | Common salt | ... | ... | ... | 1 oz.    |
|       | Water       | ... | ... | ... | 20 oz.   |
|       | Ammonia     | ... | ... | ... | 2 drops. |

In order to prevent the toning bath being contaminated or spoiled by traces of the No. 3 solution; take the prints out of the toning bath separately with one hand, and with the other hand immerse them in the No. 3 solution; when all are toned, thoroughly rinse the hands, then wash the toning dish and put it away.

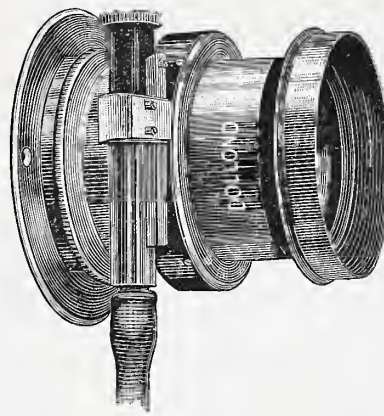
The prints should remain in the above solution about five minutes, then take out the prints singly, and immerse them one by one in the following fixing bath:—

|        |                       |     |     |     |         |
|--------|-----------------------|-----|-----|-----|---------|
| No. 4. | Hypo sulphite of soda | ... | ... | ... | 1 lb.   |
|        | Water                 | ... | ... | ... | 120 oz. |

Move the prints about in this solution for ten minutes, turning each one over singly and repeatedly, and separating them from each other so as to allow of perfect fixation; then, without rinsing, immerse them again for five minutes in the No. 3. solution, which should be transferred to a separate dish kept expressly for the purpose, after which they should be thoroughly well washed for several hours in running water or in continual changes of fresh water.

### LADY MURRAY'S SENSITISED PAPER.

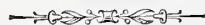
A sample of this paper, sent to us from the depot, Chichester Street, Westbourne Terrace, W., has given us very good results, and seems very free from any liability to blister.



### THE "IROID" LENS AND SHUTTER.

Messrs. Dollond, of Ludgate Hill and Old Broad Street, are introducing a very convenient iris diaphragm shutter, fitted to a good rapid rectilinear lens. The opening and closing is effected by a species of iris dia-

phragm actuated by a pneumatic release, and either time or instantaneous exposures can be given at will. The prices are £3 15s. for quarter-plate, £4 4s. for half-plate, and £5 5s. for whole-plate.



## City and Guilds of London Institute Technological Examination.

### PHOTOGRAPHY.—PRACTICAL EXAMINATION.

#### ORDINARY GRADE.

(Only one test to be made.)

1. Take a quarter-plate negative of a basket of potatoes, tilted towards the camera, on a deal table, the basket to occupy at least half the area of the plate. The lighting is to be such as to give the greatest relief. Three plates may be exposed, and the best may be sent up for examination. The negatives to be developed, fixed, washed, and may be dried by spirit.

2. The enclosed glass is to be tested as to its suitability for the dark-room. The practical tests, if any, to be sent up for examination, with a written description of them.

Four hours allowed for this examination.

#### HONOURS GRADE.

(Only two tests to be made.)

1. Make a negative suitable for photo-lithography of the enclosed print on a quarter-plate.

2. Find the focal length by candle-light for parallel rays of the enclosed lens, expressing it in inches, and explain how you arrived at the result.

3. Test the relative sensitiveness of the two plates enclosed marked A and B; send up the plates after their trial, and explain how you arrived at your results.

Four hours allowed for this examination.



## Elementary Photography.

BY JOHN A. HODGES.

### CHAPTER XVII.

#### PORTRAITURE.

Amateur Portraiture—Practical and Technical Difficulties—The Studio—A Few Hints on Lighting the Sitter—Out-door Portraiture—What to Avoid—Background, etc.—The Lens and Plate—Sitting-room Portraiture—Choice of the Room—Aspect—The Position of the Sitter in relation to the Light—Screens and Diffusers—Suggestions on Posing—What to Avoid—Exposure—Development.

IN writing for amateurs upon the subject of portraiture, I am strongly inclined to repeat the oft-quoted advice given by *Punch* to those about to marry, and say "don't," only that I feel it will have but little influence upon the majority of my readers. The first thing the possessor of a lens and camera sets his mad ambition upon is the taking of portraits, notwithstanding that to be a successful portraitist demands perhaps more skill and artistic ability than any other department of photography. Not only is this so, but the practical and technical difficulties in the way of the ordinary amateur are very great; for instance, in order to secure good results it is almost indispensable that the photographs should be taken in a properly constructed studio, a condition beyond the reach of most amateurs. Of course, good work, nay, work of the highest class, may be produced without the aid of a studio, but to do so demands the possession of no inconsiderable skill and knowledge upon the part of the operator.

We are all acquainted with the atrocious monstrosities, elept "portraits," of the amateur photographer, and it is with a view of preventing our friends from producing, through ignorance of the principles, similar unsatisfactory results, that this chapter has been written, though, for the reason above stated, it will be but seldom that results comparable with professional work can be produced.

The first and most important point to be considered is the lighting of the sitter, and we shall probably have to choose between taking the photograph out of doors, or in an ordinary room.

Generally speaking, if a little trouble be taken, better results, from an artistic point of view, will be obtained indoors than out. The defects of each system, however, will be of an entirely different character. In working out of doors the difficulty is to avoid flatness, and want of relief, owing to the evenness of the lighting. On the other hand, portraits taken indoors very frequently show an undue amount of contrast, the lights being hard and the shadows dense. I will first deal with outdoor work, though the advice which I shall offer upon posing, and the arrangement of the sitter, will apply equally to either mode of working. A portrait should never be taken in direct sunlight; either a dull day should be chosen, or the sitter should be placed in the shade. In order to avoid heavy shadows under the eyes, nose, and under lip, which tend to destroy likeness, and apparently age the sitter, a piece of thin muslin should be suspended over the chair in which he or she is placed, in order to diffuse the light. It would be well, too, if the light appear to fall evenly on both sides of the sitter, either to place the chair about three feet from a high wall or put an opaque screen at about the same distance on one side, so that one side of the face may be thrown partly in shadow, and the necessary relief secured. If circumstances are favourable, a natural background, such as an ivy-clad wall, may be employed, though in most cases an artificial one will be more suitable. A plain grey or neutral-tinted graduated background, mounted like a map on a roller, may be purchased for a few shillings, and if

the reader intends to devote his attention seriously to portrait work he should make the outlay. Backgrounds with terraces, pillars, festoons of flowers, and other eccentricities of the artist, should be carefully avoided, and a perfectly plain one selected. A rapid rectilinear lens should be used, and its focus should be at least one and a half times the length of the base line of the plate, for if one of shorter focus be employed, distortion may result. In order to avoid the chance of movement the exposure should be as brief as possible, therefore a smaller stop than  $f/8$  or  $f/11$  need not be used. For the same reason a moderately quick plate should be chosen, and its development may be effected with the normal developer given in the chapter dealing with the development of the plate.

Sitting-room portraiture requires a little careful consideration and arrangement of the resources at command, in order to secure the best results. Naturally, some rooms are better adapted for the purpose than others. The aspect is, of course, important. A room with windows facing north, or north-east, will be easiest to manage. If the aspect be south, or south-west, portraiture cannot be indulged in while the direct sunlight is falling upon the windows. A broad room with two windows will afford the best conditions, for if the room be narrow, owing to the short distance between the camera and the sitter, the use of a short focus lens becomes necessary. We will assume that a room such as is shown in the rough ground plan in fig. 1 is available, and that the camera is placed at C. Now the first impulse of the novice will, doubtless, be to place the sitter as near to the window at A as possible, in order to utilise all the available light. This, however, would be a great mistake, and will account for a great many failures. The difficulty with the lighting in sitting-room portraiture is not because there is an insufficient amount, but rather on account of the unsuitable manner in which it is admitted. The nearer the sitter is placed to the window the greater will be the contrast of light and shade in the photograph. Therefore, the chair should be placed about five feet from the window at the point marked D, the camera remaining in the same position. A marked improvement in the lighting will be manifest, although the shadow side of the face will probably still be too dark. To obviate this defect a clothes-horse, or a screen, should be placed at E, about 4 ft. from the sitter, and a white tablecloth, or a sheet, thrown over it, which will have the effect of further softening and lighting up the shadows. If the light be very brilliant, it may with advantage be subdued by hanging in front of the window a strip of *very fine* muslin. The foregoing observations as to lenses apply equally to sitting-room portraiture, though if great rapidity of exposure is necessary, a portrait lens may be substituted for the rectilinear, though the latter is to be preferred. For this class of work a rapid plate may be used with advantage.

In regard to posing, little can be said in an elementary text-book. In the first place, try and secure an easy and natural expression by putting the sitter, as far as possible, at ease. Let the chair in which he sits, if the portrait be a sitting figure, be easy and comfortable. The use of a head-rest should be avoided, as in most cases it results in introducing an unnatural stiffness into the portrait. If the subject is so shaky as to render it impossible to take the portrait without its aid, my advice would be not to make the attempt. Avoid all theatrical or stagey attitudes. Simplicity and naturalness are the great points at which to aim. A more artistic result will often be obtained if the sitter is allowed to be engaged in some ordinary occupation such as reading or writing, but in such cases too many accessories must not be introduced into the picture. If, however, a portrait pure and simple, or a "head and shoulder" study is desired



great attention must be paid to the pose. In the first place, the camera must be levelled, and in a line with the head of the sitter, neither pointing up nor down, for in the first case the chin and jaw would probably be unduly accentuated, and in the latter the forehead would appear abnormally large. The head should be erect and nicely balanced on the shoulders; if it were allowed to droop, the effect would be the same as if the camera were tilted. The sitter should never be allowed to stare into the lens, but should give his head a half turn towards the direction of the light. It is said, and I believe with some truth, that with most individuals one side of the face is better than the other. I should say here that if the room have two windows, the one near the camera should have the blind drawn down, or uneven lighting may result. The advantage of having the two windows is that the sitter may be placed in front of either, and thus the best side of the face portrayed.

I will conclude this chapter by giving a few hints upon the development of portrait negatives taken in a sitting-room. The great difficulty, as I have said, is to avoid undue contrast; therefore the exposure should be as full as possible, and the plate a quick one, for the beginner will generally find that it is more difficult to get density on very rapid plates than on slow ones. Hydroquinone, on account of its tendency to give contrast, should never be used for this class of work. Pyro will be found to give the best results. A smaller quantity, however, may be used than that recommended in the chapter on development for landscape work. The following proportions will generally be found to give good results:—

|         |    |    |                           |
|---------|----|----|---------------------------|
| Pyro    | .. | .. | 20 minims, equal to 2 gr. |
| Bromide | .. | .. | 20 "                      |
| Ammonia | .. | .. | 30 "                      |
| Water   | .. | .. | 2 oz.                     |

The above developer is, of course, to be made from the 10 per cent. stock solutions already described. If the exposure has been correct the image should begin to appear in about two minutes, and if upon examination during development, it appears likely to become too dense, the developer may be further diluted by adding half an ounce of water. If the plate be under-exposed, it should be rejected and a fresh exposure made.

(To be continued.)

## Wints to Beginners.

BY "NOVOCASTRIENSIS."

VARIOUS letters and articles have appeared in this journal under the above heading, but it is not improbable that a few more notes by a "mere amateur," may interest some of the younger readers. A seven years' experience teaches me:—

(1) *Developing and Fixing.*—Dishes with painted names of their intended contents are not necessary; develop in a black dish, fix in a white one. In choosing his dishes the beginner should choose a deep one for hypo, and shallow ones for toning, and keep them separate in the dark-room. For alum he can use a black dish.

(2) *Hypo.*—Buy this by the stone, cost about 1s. 6d. The best means of storing it is to use one of those red earthenware jars or crocks, lined with yellow glaze, to be purchased in any crockery shop. In the north of England they are used for holding bread, and are known as "mugs;" the writer uses one 9 in. deep, by 8 in. across the mouth, with a dinner plate as a cover to keep out dust. A saturated solution of hypo is very convenient, and can be kept in a Friedrichshall water bottle, or any large corked bottle holding about one or two quarts. If the solution be made in some other vehicle, a basin or pickle bottle, for instance, it can when cold, with advantage, be filtered into the stock bottle, as it can then be shaken without bringing up a lot of dust, etc. Hypo has a tendency to sink should the solution not be quite saturated; and moreover this chemical often contains extraneous matter.

(3) *Fixing.*—A recent writer in the AMATEUR PHOTOGRAPHER recommends removing the negative from the fixing bath *as soon as clear*; this is a mistake, as the hyposulphite of silver in the film is almost insoluble in water but very soluble in hyposulphite of soda; hence the necessity of keeping the negative at least fifteen to

twenty minutes in the fixing bath; or should the photographer be developing a large number of negatives, use a second hypo bath, leaving them ten minutes in each before washing.

(4) *Washing.*—This is best accomplished by putting the negatives under the tap in a large flat dish, slightly tilted, so that the water enters at one corner, and runs out of the lip at the diagonally opposite corner; care being taken that the dish is so slightly tilted that all the negatives are fully covered with water. The water should be led by a piece of soft red rubber tube to the corner of the dish. Should the photographer be from home, and unable to monopolise the tap for so long (for the above suggested washing should last twenty minutes at least, half an hour makes sure of complete elimination of hypo), give the negatives a couple of minutes under the tap, and let them soak all night in water, and give them three minutes under the tap again in the morning; if care be used, the negatives can be soaked in the ordinary wash-hand basin of the hotel or lodging house, and a judicious negotiation with the chamber-maid will probably procure the use of a second basin, the photographer, of course, remunerating the damsel for her extra work in clearing up his mess. The writer has developed, fixed, and washed many negatives in the above manner; though it is but fair to say he always on his return home has passed them through a fresh hypo bath, and given them a thorough washing in case the first washing by any accident has been incomplete; and he has never lost a negative through imperfect elimination of hypo, except two half plates, and these were badly washed through an accident, and the extra bath on his return home forgotten.

(5) *Albumenised Prints.*—Preliminary washing: A couple of ordinary milk pans, 14 in. diameter across top (red and yellow ware as mentioned above), answer this purpose; first washing, in and out, second, third, and fourth, five minutes each, and fifth till toning begins; all free silver will by this means be thoroughly eliminated. Toning: The writer uses a borax toning bath, made as follows:—360 gr. borax are dissolved in 30 oz. hot distilled water; when cold, for one sheet take, say, 5 oz. borax solution, 1 gr. gold, 5 oz. distilled water, and this solution is immediately ready for use. N.B.—If tests acid, neutralise with soda bicarb. When all the prints are toned, filter back into stock bottle; in process of time the stock solution becomes dark claret in colour, and in that state will tone, though very slowly, an odd print or two. When the stock bottle is full, throw away sufficient to enable the last-used portion to be filtered into the bottle. Should the stock solution turn green, it has decomposed, and should be thrown away and a fresh solution started. Needless to say, the stock solution should be kept in the dark. After toning, the prints should be put into a strong solution of common salt to stop the toning and harden the albumen. This toning bath gives a fine warm brown tone. For fixing, the writer (wrongly, perhaps, in theory) has no accurate system. Take a large handful of hypo and put it into a deep half-plate porcelain dish, fill up with boiling water. This can be done in the intervals of washing the prints, provided the photographer keeps it well away from the bench where the toning operations are going on, and washes his hands thoroughly after touching the hypo. When all the prints are toned, pour the hypo solution into one of the milk bowls, add two dishes full of tap water,  $\frac{1}{2}$  oz. amm. hydrate, and 1 oz. spirits of wine; this last prevents blisters. Put the prints into the fixing bath one by one, and keep them moving for ten minutes, and let them lie still for another fifteen, then put them into the salt water again for half an hour. For washing, empty out the fixing solution and place the milk pan under the tap. Make a syphon as follows:—Take a piece of  $\frac{1}{4}$  in. india-rubber tube of, say, 12 to 15 inches long, bend it so that one end reaches the bottom of the pan inside and the other reaches below the bottom outside. With a piece of copper wire 3 in. long, with a ring just fitting the tube at each end, form the india-rubber tube into a U shape, one leg of the U longer than the other, and whip the curved part with fine whip cord to prevent it kinking; bend the wire so as to fit over the edge of the pan, and you have a rough syphon quite equal to the occasion. Fill the pan with water and set the syphon going, the water running into the sink. Put the prints into the pan one by one, and, when all in, turn the tap so that rather more water enters than the syphon can carry off. Thus there will be two currents, one from the tap to the syphon and one from tap to where the water overflows. Let the water run all night, or, say, eight hours, and all the hypo will be eliminated. The writer has worked on these lines, and has never lost a print for want of washing.

Finally, the photographer should himself, after every operation, wash thoroughly under the tap all dishes, measures, etc. Trust no one else. A fourpenny sponge is the best medium for rubbing the dishes, and when clean, rinse them under the tap and stack them to dry. When dry, put them in their appointed places. Do not use an old bit of sponge, as small pieces break off and get into the sink and block it up. Charge the dark slides immediately after developing. Use your dusting brush freely on camera as well as slides. As soon as slides are filled, pack everything into case ready for next expedition. System, order, and cleanliness are the amateur's best friends.



## A Universal Hand-Camera.

By MAJOR BRUNO.

### CHAPTER I.

IN an article\* on the "Hand-Camera" (chap. xix., "Instantaneous Photography") Mr. Harrison clearly defined the features necessary to fulfil the various requirements of a careful worker with this type of camera, and in a subsequent letter (AMATEUR PHOTOGRAPHER, April 15th, 1892) we briefly described an instrument combining these features in a compact box form, home-made, and the outcome of some years' experience in the deficiencies of apparatus commercially procurable for this branch of photography.

At the request of the Editor, and in response to many enquiries, we will proceed to give such details as should enable any amateur, fairly skilled in the use of tools, to construct a similar instrument. The workshop is a valuable adjunct to the dark-room, and a new pleasure is undoubtedly added to photography when the operator uses apparatus the outcome of his own labour. To encourage the diffident, or those possessed of but a meagre "plant," it may be remarked that the camera to be described was made with the most ordinary kit of carpenters' tools, while the greater part of the material came from a disused book-case.

In the first place, the size of plate to be used must be decided upon. Hand-cameras are made from lantern-size to half-plate, and even larger, but we strongly advise the adoption of the quarter-plate for this class of work, for the following reasons:—

(1) The plates are easily obtained, and the pictures are produced at the minimum of cost.

(2) This size lends itself most readily to the results usually required from a hand-camera, viz., lantern slides or enlargements.

(3) Any larger sized plates add so considerably to the weight and bulk of the apparatus, and to the difficulty of securing correct focus, that certain other small advantages obtained by their use are outweighed, literally and metaphorically.

The camera we are about to describe is therefore designed for quarter plates, films, or roll holder, but the dimensions can obviously be modified to suit other sizes. It should be noted at this stage, that the lens used with it, for ordinary work, is a rapid rectilinear of  $5\frac{1}{2}$  inch focus, and, as will be seen later, the length of the box is contingent on this focal measurement. At the same time lenses of from  $3\frac{1}{2}$  inch to  $7\frac{1}{4}$  inch focus can be employed. In practice we use a  $5\frac{1}{2}$  inch for instantaneous shots, a  $3\frac{1}{2}$  inch rectilinear for confined situations, and one of its combinations for seascapes and distant landscapes.

The power of thus using lenses of varying foci, with the use of the same shutter (by means of a sliding extension to the front of the box), and the introduction of a mechanically correct swing back and rising front, form the desiderata obtained, in addition to those usually provided; obtained, moreover, without increase of bulk, and furnishing the hand-camera with all the attributes of the more pretentious folding "bellows" pattern. To obtain success with an instrument of which such precision is demanded, care must be given in all the details of construction. All working parts must act smoothly and accurately, and should be constantly tested to that end as the work proceeds. The first consideration is the wood to be used. Pine may be pressed into the service, but for a job of this description nothing beats sound, well-seasoned, close-grained mahogany.

It holds glue well, is easy to work, and takes a fine polish. Should a supply not be otherwise obtainable, suitable wood for our purpose can be procured ready planed and in any length from most dealers in fretwork material, of whom Messrs. Harger Brothers, Settle, or Skinner and Co., East Dereham, may be mentioned. There is a kind known as "3 ply" which consists of three thicknesses glued together in opposite directions of the grain, thus preventing warping and splitting. By working with this it is possible to fit thinner wood into many parts of the camera, diminishing weight, every ounce of which tells on tour.

Before entering into details of construction it is desirable that a general idea of the camera, when finished, should be formed. With this object the following cuts from photographs are given:—

Fig. 1 shows the camera as carried, closed, but without its protecting wrapper, with the sliding doors of lens and finder apertures shut. It will be observed that the carrying handle is secured to the lid of the box. In use, the cover (with a slot cut to take this handle) is slipped over the case, and secured by straps passing through the loops in the handle and round the box. Directions for "shaping" the cover will be given subsequently.

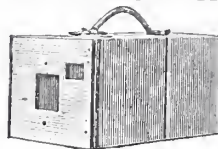


FIG. 1.

In fig. 2 the bottom of the case is shown, together with the whole of the mechanism for focussing and working the roll-holder. It will be seen that two circular apertures are cut; one to wind off film, and a second to watch the indicator.

The set-screw shown is connected with the camera "front," and gives the focus by sliding to and fro between the brass strips.

It is instantly clipped at any point within the range of focus (as shown on the ivory scale by a brass pointer, also connected with the camera front), and this arrangement, both for speed and security, is greatly to be preferred to a rack and pinion.

The semi-circular scale with pointer shown is a brass dial numbered from one to twelve, as a memorandum of exposures. The tripod screw is also seen in position for horizontal pictures. For vertical pictures a second socket on the side of the box is provided.



FIG. 2.

Fig. 3 shows the hinged door in the side of box for admission of dark slides, roll-holder, or focussing screen, and is provided with a tablet for notes. This door is hinged with a spring, so that when released by a touch of the finger it flies back at once, expediting dark-slide work considerably. Inside the case, the camera "back" will be seen, pivoted centrally to an upright in the box by one set screw, and clamped in a brass quadrant-shaped slot by another. It will be apparent that a correct central swing is thus given to the camera back, which is, of course, similarly pivoted at the opposite side of the box. The end of the box is shown partly raised in its grooves for focussing, and the roll-holder waits employment, vice dark slide, "retired."

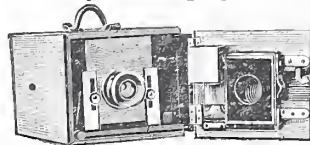


FIG. 3.

Fig. 4 gives a general view of the front of box, with the lens-board at its longest focus. This lens-board, or "front" as it is usually termed, slides with a rise and fall in the brass runners, and is clamped with set screws as shown. The frame which carries this front slides to and fro in

\* These articles should be consulted by all who intend to construct a camera on similar lines.—H. W. B. B.



grooves fixed to the sides of the case, and is rigidly held at any desired focus by the set screw referred to in fig. 2. It should be noted that the front, or door, of the box (shown open) is not hinged to the case itself but to a sliding flap. By this means it is run out, and when swung on its hinges enables one to use the shutter both with medium and long-focus lenses. In practice when the hinged door is closed (and the flap run in) the  $5\frac{1}{2}$  in. lens works during its variation of focus entirely within the collar of the shutter so as to remain light-tight in every position. This door can be removed entirely by sliding the flap out of the grooves, and is a useful movement if using a very wide-angled lens of extra short focus. The focussing screen is carried in grooves on the left side of case, and is drawn out from the front. On the inner side of the hinged door, the shutter (a "Thornton-Pickard"), its spring-release and setting-cord, the finder, and the leather case of lens stops are shown in position.

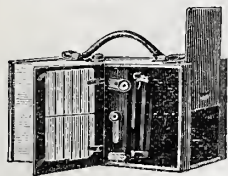


FIG. 4.

and is a useful movement if using a very wide-angled lens of extra short focus. The focussing screen is carried in grooves on the left side of case, and is drawn out from the front. On the inner side of the hinged door, the shutter (a "Thornton-Pickard"), its spring-release and setting-cord, the finder, and the leather case of lens stops are shown in position.

(To be continued.)

## With a Camera in Spain.

By AUSTIN J. KING.

(Continued from page 405.)

ON shore I asked permission to photograph, offering only to take such neutral points as the Alameda gardens (the cemetery of the brave defenders of our flag during the great siege), the old Moorish castle, and the like. I was encouraged in my request by seeing the shops full of views of every part of the little Peninsular. But though the Governor was most polite, he explained that he had no power to give a permit which could be obtained only from the War Office.

Of course, the reasonable character of such a rule is obvious, and the real matter of regret is that it should have been so long delayed and that so many pictures should exist. No sketching of any kind is allowed.

A system of defence exists at Gibraltar so interesting as to be worth mentioning. In a chamber on the upper rock is a large plan in metal of the bay divided into sections. The officer in charge of this can see vessels as they approach long before they would be visible from the gun battery. He telegraphs to the gunners by marking on a similar plan the position of the vessel, and indicates its rate of progress. The gun is trained on to the vessel, and when it is in the right section, the signal to fire is given. The result is that gun practice can be made at vessels quite out of sight of the gunner.

Disappointed at the discouragement of photography on British soil, I fitted into Spain, first to Linea and then to Algeiras. But in both I was warned that unless I wanted to spend a night in a Spanish prison (and I believe the accommodation is not good there) I had better not be seen taking photographs on the frontier.

By this time I had become satisfied that Spain was a place for a man to avoid who was dependent for his happiness on exposing plates.

I went across to Morocco, and stopped a few days at Tangier. Here I might do what I liked. I might photograph the harbour defences, which were armed with six-pounders, or the castle, or the Treasury, or the bathing machines. But I did not want, so perverse is human nature, to photograph these.

I wanted to photograph the patriarchs in long flowing robes who levied custom dues at the Porte, and who looked as if they had stepped out of some illustration of Bible history; the red-fezed boatmen, who were of the creed and type of the pirates who for centuries harried the coasts of the Mediterranean; I wanted to photograph the camel-drivers who came to the soko, or market, loaded with dates from the desert; the horsemen who dashed along with the flint lock fusils of the fifteenth century; the snake-charmers, the story-tellers, the water-carriers, and all the personal wonders of that country which, but three hours' sail from English civilisation, is yet plunged in the picturesque barbarism of nearly a thousand years ago. But the Koran forbade.

Many people object to being photographed; most people object to being photographed by amateurs. They do not want their heads to come out bald and their hands and feet to be of giant size, and all human expression to be banished from their faces. They value their self-respect.

But these Mahomedans were afraid that their picture would be so beautiful that it would attract the evil eye.

I did not know whether the Spanish Government would be as jealous of the art-science at Malaga as at Algeiras or Linea, but the Spanish captain of the coasting steamer assured me that the officials did not care what was done except near the British lines.

My second fear was more practical. Every one who ever enters Spain smuggles or is credited with smuggling tobacco, and the authorities are unremitting in their efforts to detect it. I saw men on the steamer almost undressed in the search, and it was not unnatural to expect that such convenient receptacles as a camera and slide-case and roll-holder would not escape scrutiny.

I mentioned my difficulty to the hotel courier who boarded the steamer, and explained that although I carried nothing contraband, I did not want to prove my innocence at the expense of negatives and plates.

The courier asked me if I objected to his spending two pesetas, and without waiting a reply presented a coin of that value to a hero in a cocked hat, who looked at least a General of Division. I trembled. But instead of ordering me into durance, he waved his sword, made a myrmidon mark on all the unopened luggage with a cabalistic sign, and the ordeal was over.

There are many pretty views to be obtained in Malaga. The town and harbour can be commanded from the Mole, near the light-house; and in the orange market and the narrow streets of the town are to be found some charming subjects for the hand-camera.

But the heat was intense, and the mosquitoes nearly as large as donkeys, and as fierce as man-eating tigers. We were glad, therefore, to go on by rail to Granada.

The scenery was splendid *en route*, and as we took eight hours to travel some seventy miles, we had some opportunity of seeing it.

Granada has charms to which no camera can do justice. Those of you who are familiar with Prescott's "Ferdinand and Isabella," or the still more romantic "Conquest of Granada," by Washington Irving, will appreciate the associations, ethnological and archaeological, which cluster about this favoured province.

When, in the year 1320, the rest of Moorish Spain was conquered by St. Ferdinand III., the remnants of the old Moorish families took refuge in Granada, and it was held by them until the final expulsion of the Moors from Spain in 1492. During this period Moorish art and architecture were at their zenith; pleasure, both sensuous and intellectual, was pursued with a zest excelling aught else of which we have record.

At the end of the fifteenth century, the Christian troops closed around the devoted province, and, notwithstanding heroic deeds of bravery in its defence, the Crescent sank, and the banner of the Cross waved above the towers of Granada.

The crowning glory of the city is the world-famed Alhambra Palace. As Owen Jones says, the Moorish architecture is essentially religious and the offspring of the Koran, as gothic architecture is of the Bible. The Arabs, in changing their wandering for a settled life, in striking the tent to plant it in a form more solid, had transferred the luxurious shawls and hangings of cashmere which had adorned their former dwellings to their new, changing the tent-pole for a marble column and the silken tissues for gilded plasters.

The Alhambra Hill was strongly fortified, and afforded room not only for the palace and a fortress capable of holding 40,000 men, but also a beautiful mosque, which was destroyed during the French occupation.

The walls were studded with towers: those on the south, towards the plain, were for the purposes of defence; whilst on the northern hill, which was protected by nature, they formed the charming habitation of the Sultan and his harem. "The severe but picturesque exterior of these towers gives no indication of the art and luxury within. They were formed without, like the palaces of the ancient Egyptians, to impress the beholder with respect for the power and majesty of the king; whilst within, the fragrant flowers and running waters, the porcelain mosaic and the gilded stucco work, were constantly made to remind the owner how all that administered to his happiness was the gift of God."

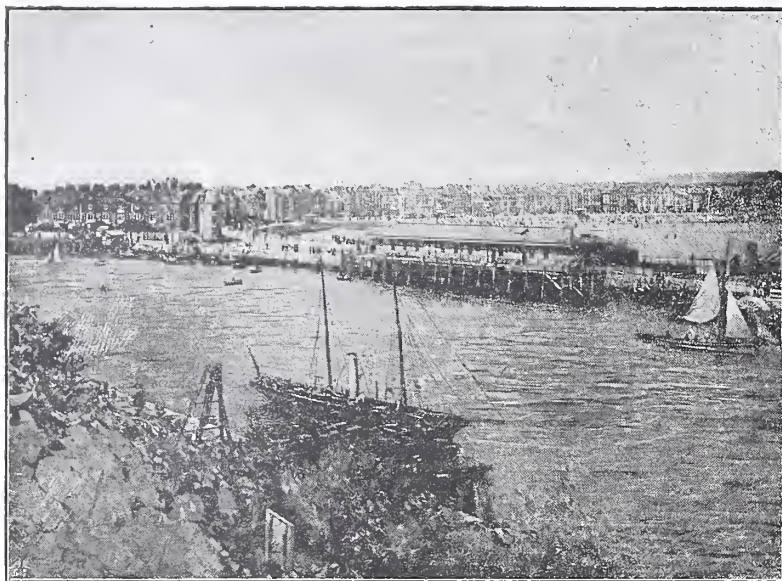
(To be continued.)



## Holiday Resorts and Photographic Haunts.

### WEYMOUTH.

THE situation of Weymouth as a charming watering place is most delightful; in fact, so much so, that it is often called "English Naples." The view we get from the Nothe is most panoramic, embracing as it does the harbour, the landing stage of the G.W.



WEYMOUTH FROM THE NOTHE.

Company's steamboats to Jersey and Guernsey, and the most beautiful promenade, undoubtedly one of the best in England. We look still further, and our eyes rest on the rugged and picturesque cliffs near Preston, Osmington Mills (noted for lobster and prawn teas), the White Horse, and still further on until our eyes reach the beautiful Lulworth Cove. We now turn our backs on this spectacle, and view Portland Roads, Portland Breakwater, and Portland Headland, which form a very beautiful picture.

The Esplanade has been recently lengthened, and is now upwards of a mile and a half in length, forming one of the most charming promenades in Europe, the shrubs and seats throughout its length giving it a very pleasing appearance. Artistic shelters have been placed on the Esplanade and Pier. The Nothe has also been laid out on the north side and planted, and seats placed at intervals. The Greenhill Gardens at the other end of the Esplanade are generally open to the public.

The objects of interest in the neighbourhood are numerous and unique. They include Maiden Castle, the finest pre-historic fortification in England; Abbotsbury, with its Swannery (the best in Europe), from which the Weymouth swans, given by Lord Ilchester, came; Lulworth Cove, with its famous castle, to which frequent steamboat trips are made; Upwey Wishing Well, at Upwey; the New Grand Hotel now being built on the Front at a cost of £38,000; Greenhill Gardens, almost at the far end of the Esplanade; King's Statue, erected by the inhabitants as a Jubilee Memorial to George the Third in 1809; the Royal Victoria Jubilee Hall, one of the finest in England, built at the expense of a local company, and capable of holding 6,000 persons; the General Post Office, in St. Thomas Street; Market House, in St. Mary Street; Alexandra Gardens, on the way to the Pier, which are tastefully laid out, a statue of Sir Henry Edwards standing in one corner (recently a bandstand has been erected—

various kinds of music and other amusements are performed in the gardens during the summer season) the Pier, at the end of which a shelter and band stand has been erected, occupied during the season by the Town Band and various other entertainers; the Nothe, from which we can get a splendid view. From the fort on the Nothe the old guns have recently been removed and their places filled by others of more modern manufacture, making it one of the best fortified positions along the coast—the walk round the Nothe is very pleasant and interesting.

We should also mention as being objects of interest—Sandfoot Castle, a very old and interesting structure, built in 1553 by King Henry VIII., portions only of its immensely thick walls now remaining.

Wyke, a pretty village some two miles from Weymouth; here we see the old church, said to be the parent church of Weymouth. It is built in the Gothic style, having a lofty tower containing eight newly-erected bells. In the churchyard we see two very interesting monuments, one erected to those drowned in the ill-fated *Abergavenny*. Messrs. Whitehead are erecting near Wyke large torpedo works which will make it necessary to provide house accommodation for all those employed by this firm.

Radipole, a pleasant village about a mile from Weymouth, noted for its sulphur spring.

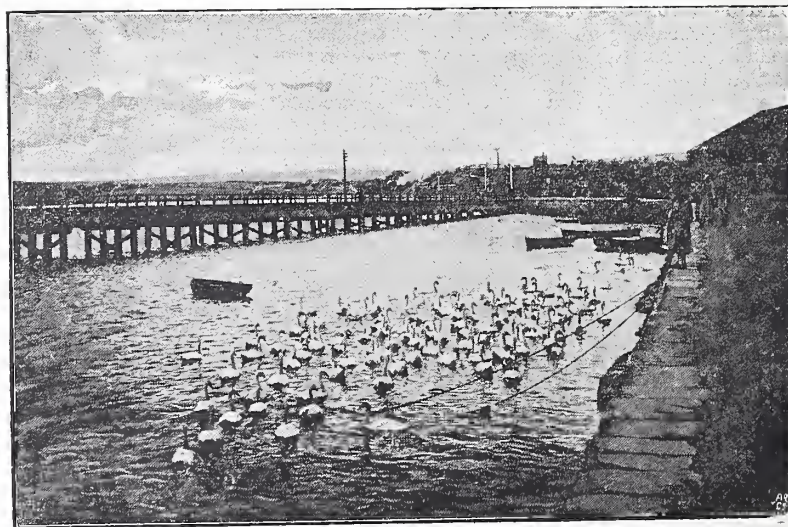
Upwey—this is undoubtedly the pleasantest resort near Weymouth; it contains some very charming and unique villa residences, also St. Lawrence's Church, a beautiful ivy-covered edifice of Gothic character. Here is also the Wishing Well, with its ancient romance. This place is much frequented by visitors.

Preston, another pretty village about three miles from Weymouth; here we can find a splendid uninjured tessellated pavement over a thousand years old, and many other interesting objects. In this village Samuel Wesley was born (father of John Wesley), who went to school at

Dorchester, before going to Oxford.

Osmington Mills—the views we get from the heights here are very fine; the place is also noted for hot lobsters and prawns. On the seaward side of the hill is the White Horse.

Abbotsbury, one of the most picturesque villages in the country. Here we have "Abbotsbury Monastery," St. Nicholas Church, a Gothic edifice of great antiquity, with an embattled tower, in



WEYMOUTH SWANS.

which are five bells. In the interior we find a handsomely-carved pulpit with marks of Cromwell's bullets. Not far off is the Swannery and Decoy, dating from the time of Elizabeth. Abbotsbury Castle, the seat of Lord Ilchester, is a modern Gothic structure.

Plates and chemicals are stocked by, and a convenient dark-room provided at Smith's Supply Stores, 35, St. Thomas Street.



## The Eastman Company.

A VISIT to 115, Oxford Street, London, W., gave us a slight insight into the method of and amount of business done by the Eastman Photographic Materials Company. On entering the premises we see numerous assistants all busy taking orders and showing the Kodak and the method of using it. Being shown upstairs, we are met by Mr. Walker, the Manager, and, after a brief conversation, we are shown over the premises. We see an enormous stock of films, bromide paper, and Kodaks upstairs, with here and there a room full of clerks all as busy as bees. On our rounds we are also shown the system on which the business is worked, and it is simplicity itself, but it only makes us wonder at the master mind which first set it going. Downstairs in the basement is the packing department and the dark-rooms, and Mr. Walker impressed upon us the ease with which, if any mistake did occur, the defaulter could be detected; but such things rarely do happen, so plain is each man's work and so simple the, at first sight, complex system. On our expressing a wish to go over the factory, we were told, "No time like the present. Mr. Wellington, our works manager, is here, and will take you." So off we started in Mr. Wellington's company for Euston, en route for Harrow. After a short walk from the station we arrived at the factory, and there is no mistaking it, for, as will be seen in the general view of it which we here give, the sign manual is written, large enough for him who runs to read, across the face of it, "Kodak," with the now household expression, "You press the button, we do the rest."

Our first visit is to the reservoir, which holds 40,000 gallons of water, which is pumped from a well sunk by the Company themselves, for, as Mr. Wellington said, after paying £120 for water in one year to the Water Works Company, they came to the

conclusion it would pay them to run their own well. From this little bit of economy and enterprise we go to the room where all the bromide paper and films are sent off from and where the stock is kept. Thence we ascend to the first floor, where we see the masking of negatives and print spotting, all done by nimble female hands, the sensitising of paper, and washing, toning, and fixing of prints, and to many of our readers this department would just be astonishing; toning is here effected in huge stone-ware sinks, and hundreds of prints float about, being constantly kept on the move in several gallons of toning bath.

The developing room is also extremely interesting. Here we have benches for nine operators, who just keep on developing, in a matter of course, methodical manner quite astonishing. The light being filtered through canary medium, is pleasant and bright, yet perfectly safe. In the Enlarging Room we wait to see an enlargement exposed and developed, the light there being a very powerful arc-light, and it is possible to enlarge from the original circular Kodak picture or a 12 by 10 negative to 70 by 40 inches. The necessity impressed by the Eastman Company upon the users of their bromide paper to keep hypo out of the way when developing is certainly well carried out in practice by the Company themselves, as the enlargements after clearing and wash-

ing are passed through a sliding door into the next room to be fixed.

On the roof are the printing rooms, where we find numberless frames exposed, all with amateurs' negatives being printed from; and an examination of these showed us that some very good work was done, and Mr. Wellington informed us that the advance in good results is increasing. We have now practically finished that part of the building, where "we do the rest," and which is seen in our illustration, on the left.

From this building we pass through two huge iron fireproof doors to that devoted to the manufacture of bromide paper. Here we first see the laboratories, then the room where the paper as received from the mills is wound on to the rollers for the special coating machine (we regret to state that all the paper used is foreign, English not being good enough), the still for the preparation of distilled water, and thence to the emulsion making room, where four huge vats are used for mixing the emulsion, and underneath is a small (?) vessel capable of holding fifty gallons, in which the emulsion is digested by a steam jacket. As soon as the process of cooking is completed, the emulsion is run into four sunk setting pits surrounded by ice-cold water. The washing machines, six in number, have each a capacity of twenty gallons. Luckily for us, we had partaken of lunch with Mr. Wellington, or we should have been strongly tempted to partake of the slabs of cold emulsion in the store, which forcibly reminded us

of blanc-mange. This store-room is kept at one even temperature of 35 deg. F., by means of ice-water and specially constructed double walls.

After the cimmerian darkness of the emulsion-making room, the pleasant light in the paper-coating room is extremely grateful, and here we meet with what is certainly the most marvellous piece of machinery we have ever seen. As far as possible we will describe this, but it wants seeing to really appreciate it. First of all 1,800 feet of paper on a roll is placed in position, and the

paper passes over and under a series of rollers to the emulsion trough, where it receives its coat of film, thence it passes before the lantern, which is a perfect blaze of light, before which imperfections are at once seen; thence it is caught up by special arrangements on an elevated railway, and by an ingenious device hangs in huge festoons and passes down one side, up the middle, and down the other side of the room—in all three-quarters of a mile of bromide paper is there hanging ready for subsequent treatment, and, said Mr. Wellington, "I first press this button and the machine does the rest." After the paper is placed on the machine, no human hand touches it or does anything to it till it is finished. The Company may well jealously guard and prize this magnificent machine, even though it is patented.

We now come to the operation of making the flexible film. The inflammable materials used for this are all stored in a separate outbuilding for safety. The solution of pyroxylin for the support is prepared in two huge machines, which hold about 500 lb. of stuff; these are constantly at work, and when ready, the mixture is run into milk cans and allowed to stand and, if necessary, heated in a water bath. The upper rooms of this building, the furthest in our illustration, are alike as two peas. We find in each room six glass tables eighty inches long and forty-two inches





wide, on which the solution is spread as evenly as possible by a special trough which travels by the aid of machinery. To dry the film, revolving fans keep the air circulating, and the film is dry and ready for emulsion coating, which is done the next morning. We now get a fair idea of what business is done. These twelve tables, eighty feet long and forty-two inches wide, are coated every day, and some of our arithmeticians may amuse themselves by reckoning up the amount made annually and cost of same. When the emulsion is dry the film is stripped, rolled up and carted downstairs, where it is again wound tightly by machinery, passing in this operation over a bright lantern, and examined for defects, the examiner sticking a bit of black paper on the film to mark the same. From this winding machine it passes to the slitting roller, where it is cut to the required width and thence passes to the "spoolers." The spoolers stand at a small foot lathe invented by Mr. Walker, and by this lathe the film is automatically measured off and the lathe stopped at once. Should a spooler come across a little bit of black paper he knows that there is a fault, and away goes the whole lot ruthlessly—sometimes yards of it, so careful are the company to send out only perfect films.

We have now been right through the factory and given the leading features and our final visit is to the engine-room, where a Westinghouse seventy horse power engine runs all the machinery direct, and also a dynamo which lights the whole of the building. In our peregrinations we came across a carpenter and his assistants, and we were informed that the whole of the interior fittings of the factory were done by their own men, "contract and sweating work being out of it."

A visit to the factory is a lesson, and one that might well be taken by any photographer, amateur and professional, or a society if the company would permit such a visit, and we came away convinced that film photography was the thing of the future, and impressed by the cuteness of the heads which could institute and control such a business.

## Bromide Enlarging.\*

BY FREDERICK PACK.

I need hardly dwell upon the advantages of enlarging, so as to be able to make large prints from small negatives. Few words are necessary to convince any one of the value of being able to make pictures suitable for hanging from negatives which can be taken in a very small camera, whilst the taking of such direct from large negatives requires a camera which many of us cannot afford, besides which the extra labour in carrying a 15 by 12 camera and slides about the country necessitates an amount of work which not only many of us would not care to undertake, but which in many cases is almost impossible. Besides, amateurs, at any rate, don't want large prints by the score, but, as a rule, like to have a few prints from their best negatives of such a size that they can be seen without a magnifying glass, and it is for them that my remarks will be specially directed.

A great deal has been said about enlargements as compared to direct prints; but although I do not approve of "fuzzy" prints of any kind, I decidedly prefer a good enlargement of any size above 12 by 10 to a contact print of the same size, and from a negative taken direct in the camera.

A good enlargement of, say, three or four diameters, which need not be overstrained, has a softness in it which gives it a charm not possessed by a direct print of the same size.

Very fine definition is not required in pictures of 15 by 12 or over, as in the small sizes, because when we look at a 15 by 12 picture we usually stand a few feet away so as to see the whole picture, whilst in looking at smaller pictures we view them much nearer, and finer definition is then desired.

As it would be impossible for me to-night to go through and describe all the processes of enlarging, which most of you already know, I will confine myself to giving you some of the results of my own experience, hoping it may prove of use to any who wish to try this branch of photography for themselves.

With regard to the negatives, I usually take quarter plates, as I find that they can easily be enlarged to 15 by 12, which is almost four diameters, without in any way overstraining, so as to

cause "fuzziness," and as that is generally large enough for most amateurs, I think quarter plate negatives have many advantages.

Of course, half plates or whole plates can be as easily enlarged as quarter plates when daylight is used, but when artificial light is used, and a condenser is necessary, then quarter plates are more easily dealt with, as the expense of condensers for larger sizes is a serious item.

After all, a half, or even a whole plate is a small picture, and is more suitable for an album, and if we take negatives for the purpose of enlarging, we might just as well enlarge a quarter plate as a half plate. There is a slight objection to the use of quarter plates, and that is when we enlarge them up to, say, 15 by 12 from a negative taken with an ordinary focus lens, the perspective is rendered incorrect; for instance, distant objects appear nearer than what they are in nature; but in picture-making this is, as often as not, an improvement, whilst, when they are not so much enlarged as, for instance, to 10 by 8, which is about two diameters, they are more correct than the original. As bromide enlargements are the most commonly produced, and are in most respects the easiest, I will confine my remarks to this class.

The simplest method is, of course, to expose from the negative direct upon the bromide paper, and when this is properly done, the results are bad to beat. There are other ways, namely, to make a transparency of the size of the negative by contact, and from this make an enlarged negative. Or make an enlarged transparency, and from this make a large negative by contact, and from this print your enlargement. These latter processes are well adapted, when a large number of prints are required, as, of course, each enlargement can be printed in the printing frame, and much time saved, but if only two or three are required, there is no need to go to this extra trouble of preparing an enlarged negative, as the first process will yield results which cannot be surpassed, and it has the advantage of being simple, whilst the more processes you introduce, the more difficult it is to succeed.

Negatives for enlarging should be full of detail, and not too dense and sharp to the edges. I usually take them with stop  $f/32$ , and develop them without much bromide in the developer, just sufficient to keep them from fogging, as they should be quite clear.

Any amount of contrast can be had in the enlargement by using sufficient bromide when developing it. It is astonishing what excellent enlargements, with plenty of contrast, can be made from negatives without much contrast, whilst negatives with great contrast are unsuitable for enlarging. The only way to treat these is to subject them to a very powerful light, as a weak light, acting for a longer time, has not the same effect. The image being on the surface of the paper, the deep shadows get blocked up before the other parts are brought out, and show no detail in the denser parts, which is not the case in a negative or lantern slide, which is viewed by transmitted light, when the detail in the denser parts is easily seen.

Another advantage in using a small stop when taking negatives for enlarging is that you get more even negatives, so that the density at the centre is not greater than that at the edges, whereas with a large stop more light strikes the centre of the plate than the edges, and consequently the density is greatest in the centre. Negatives suitable for enlarging make excellent direct bromide prints, if developed in the same way.

Either daylight or artificial light can be used. When daylight is used various means can be adopted, but I think the best and simplest way is to place the negative towards a window, and photograph it, so that to do this you must have a light-tight box of the size of the enlargement, or, in other words, a substitute for a large camera. This does not require the room to be darkened, nor to have to work in a dark-room, and is, I think, a simpler method than having to block up a window, which is not always an easy thing to do, the camera taking the place of a dark-room. This is best made with a large bellows, to one end of which is fixed the front for carrying the lens, and to the other end a frame is fixed, to which a dark slide can be fitted. A hinged door could be used, on which the bromide paper is pinned, but a dark slide is much to be preferred, as the paper can be shut up and carried to the dark-room to be developed, whereas if the paper is only pinned on a board, it would have to be developed in the same room, or the whole apparatus carried bodily away to avoid the light.

This apparatus can be bought very cheap already made of any size up to 15 by 12, and is, I think, very convenient.

\* Read before the Newcastle-on Tyne and Northern Counties Photographic Association.



A rigid box can be used instead, when the lens is inserted at one end and the other end left open, in which case an easel made to slide in at the back for focussing, and on which the bromide paper is pinned, and a piece of cloth hung over the back of the box to exclude any extraneous light. In each case a piece of ground glass is substituted when focussing, and in the case of the rigid box a mark must be made, so that the easel can be placed in the same position. But a camera with bellows has many advantages, as it is more easily worked for focussing and can readily be made, and a dark slide for holding the paper could be bought and fitted to it. The dark slide can be had fitted with carriers for holding any size of paper, in which the paper will easily stand upright when supported at the corners, like a plate, especially if the thick paper be used; if not, it can be held between two pieces of plain glass without harm.

The best way to fix the negative for illuminating it is to fix it in the camera in which it was taken, either by having a holder to fit in the position of the ground glass, or place it in a dark slide and open both slides, then place the camera with the negative towards the light and the lens-hole pointing inwards the lens having been removed and inserted in the larger camera.

The lens used in taking the negative answers admirably, but if a short exposure is preferred, then a portrait lens can be used.

It is better to have a long board to hold the two cameras, so that the larger one, containing the bromide paper, is at one end, and the smaller one, containing the negative, upon a small table at the other end, so that the lens-hole of the small camera will be on a level with the lens in the large camera, each of these sliding between beads at either side, so as to keep them parallel. This saves a lot of time in centreing, as when once they are set, then at whatever distance they may be removed for focussing, they are always centred.

The board, with the whole arrangement, can then be rested on the window sill; and a good slope should be given, as this is very desirable; and if used with artificial light, is simply placed upon a table.

When a dark-room can be used, then the window is first blocked up, leaving an aperture of the size of the negative to be enlarged. The ordinary camera or an enlarging camera containing the negative is fixed up against the aperture, with the lens pointing inwards, so that no light can enter the room except that which comes through the negative. Of course, the ground glass is removed and the negative inserted in its place, and an easel for holding the bromide paper placed at the required distance from the lens. The camera must, in this instance, be able to extend to twice the distance of the focus of the lens used.

A window facing the north is to be preferred, or wait until the sun's rays do not fall direct upon the negative, as direct sunshine is not desirable. It is also better to be as high as possible, and to have an open view, so as to avoid houses opposite, as chimneys, etc., obstruct the light and often cast a shadow over the negative, which will show in the enlargement. In this case a mirror or sheet of cardboard at an angle of 45 deg., outside the window, so as to reflect the skylight on the negative, will greatly help to overcome these difficulties.

When artificial light is used then a condenser is necessary. It is placed between the light and the negative so as to collect the light, in order to render the rays parallel, which enter it, so as to cause equal illumination of the negative. In this case the same apparatus can be used as described for daylight, so that an open light can be utilised if a large camera is used, but if not, then the light must be enclosed, and the enlargement thrown on an easel, as in the dark-room arrangement. A good Argand burner answers admirably in place of the lime or electric light.

With regard to the exposure it will depend upon the nature of the light and size of stop used, and will best be found by trying on a small piece of paper first, and when the correct exposure is found for a certain size of enlargement and a certain stop used, then other exposures can be calculated by the ordinary tables of exposure, and the density of the negative taken into account. In the case of daylight, the light varies considerably, but when a correct exposure is found by experiment on a small piece of paper, allowance can be made for the weather the same as in taking negatives, and pretty accurate results obtained.

It is as well to fix upon a good developer for ordinary negatives, and try to expose to suit it, and if a thin or flat negative is used, then a little more bromide added to the developer, so as to give contrast, and the exposure made to suit that developer; whilst a negative with great contrast should be given an exposure suitable

or a developer with less bromide, so as to avoid exaggerating the contrast, so that exposure and development should be suited to each other. The exposure for artificial light will depend a great deal on the source of light used, but for daylight, and what I find is correct for this time of year (April), using stop  $f/24$ , at three in the afternoon, and Eastman slow paper, from quarter-plate to 10 by 8, as I have here to-night, I give three or four minutes, and develop with eikonogen, as follows:—

## A.

|                            |        |
|----------------------------|--------|
| Eikonogen.....             | 1 oz.  |
| Sulphite of soda .....     | 4 "    |
| Bromide of potassium ..... | 10 gr. |
| Distilled water.....       | 60 oz. |

## B.

|                         |       |
|-------------------------|-------|
| Carbonate of soda ..... | 3 oz. |
| Distilled water.....    | 20 "  |

Use three parts of A, one part of B, two parts of water, and one drop of ten per cent. solution of bromide of potassium to each ounce of mixed developer.

From four to six prints may be developed in this developer in succession with ease, and the following fixing solution used after:—

|                          |       |
|--------------------------|-------|
| Hypo .....               | 4 oz. |
| Bisulphite of soda ..... | 1 "   |
| Water .....              | 20 "  |

This fixing solution remains quite colourless if any of the developing solution should be carried into it by the prints, and prevents the possibility of any stains from the developer.

Ferrous oxalate is a very suitable developer, but is more troublesome to make and work with, having to have a clearing solution, and it has the disadvantage of becoming muddy when used with tap water by precipitating the lime, unless distilled water is used, and is, moreover, expensive.

Hydroquinone would be very suitable if it could be used with caustic soda or potash, but when these are used they are very injurious to the paper, as even a weak solution will rot the paper in a short time, so that it will not lift without falling to pieces, and if carbonate is used it is too slow. The above eikonogen developer is also excellent for plates, if used without the extra water, giving clean and brilliant negatives; but if one keeps to one developer, better results are likely to be obtained than when one is tried at one time and another at another, and the best way is, when you find a good developer, stick to it.

## Societies' Meetings.

**Belfast, Y.M.C.A.**—On the 21st inst. the second excursion of the season took place—Scarva, Laurencetown, and the River Bann being selected for the day's outing. On reaching the historic town the party were met by Mr. W. J. D. Walker, one of the Vice-Presidents, and were conducted by him throughout the day to the many choice bits in the neighbourhood of these places. In the beautiful demesne of Mr. J. T. Reilly ample scope was afforded for artistic work. The picturesque surroundings, with sheep and lambs effectively placed, with the aid of a shepherd and his dog, offered rare opportunities, of which the members were not slow to take advantage; many dozens of plates were exposed and good pictures secured. Proceeding to Laurencetown, to the residence of Mr. Walker, which is beautifully situated on the banks of the River Bann, plates were changed and the remainder of the afternoon devoted to the river scenery. On returning, the party were most hospitably entertained by Mr. and Mrs. Walker. The city was reached shortly after nine 9 o'clock, concluding one of the most successful and enjoyable excursions yet held in connection with the club.

**Birkenhead.**—The monthly meeting was held on the 12th inst. Mr. John M. Welch gave a working demonstration of the Ilford Printing-out Paper, followed by a spirited discussion upon its merits. Mr. E. M. Tunstall exhibited Shew's hand-camera, after which the lime-light was turned on for the exhibition of members' slides. Among these Mr. Lange's instantaneous horse-racing studies, taken at the Wirral Hunt Seephechases, and Mr. J. W. Briggs' hand-camera shots at "Lord George" Sanger's menagerie deserve special mention. Mr. Lewis Wilson, of Messrs. G. W. Wilson and Sons, was present, and the President, in closing the meeting, paid a high compliment to the work done by that firm.



**Brixton.**—An ordinary meeting was held on the 17th inst., when a large number of members and friends were present. Dr. Reynolds, 1 resident (in the unavoidable absence of Mr. W. H. Harrison), having taken the chair, called upon Dr. T. Charters White for his paper upon "Photomicrography." The lecturer said that the subject he had chosen was a vast one, on account of the great strides made in photography during the last twenty years, as applied to scientific research, inasmuch as photographs may be taken of an eclipse of the sun, of the entire heavens, or even the tiniest bacillus. In the first place, in carrying out his directions no large outlay is required for apparatus, as any person who has a camera and a microscopic can produce excellent results. Dr. White said he usually used an oblong lidless box placed on its side; the microscope clamp is then placed inside this box, and a black curtain is pulled over its front and shuts in the light, so that all operations could be performed in the same room. This box is firmly screwed on to a stout baseboard, the middle length of which slides in and out by being dovetailed on the outer sides. At its distal extremity an ordinary printing frame is screwed as a carrier to hold the focussing screen, and eventually the plate. These several parts must be accurately squared with the box and optical plane of the microscope, or the image will appear blurred. At the end of the box next the carrier an aperture is made to allow of the insertion of the microscope tube. The lamp is then lighted, and the object placed upon the stage of the microscope, and the image projected on to a glass plate in the carrier, which glass plate may have clean white paper upon it, and the velvet curtain being pulled down, a brilliant image is thrown upon the focussing screen, and that part of the subject selected that it is desired to photograph, and thus roughly focussed. If a picture suitable for a lantern slide is required the sliding base with its carrier is pushed closer to the box, and if a more extensive amplification is wanted the sliding base is drawn out. On removing the paper screen and inserting a piece of plate-glass ruled in squares with a writing diamond, with the ruled glass next the microscope, the image may be viewed with an ordinary focussing glass by resting it against the glass plate, and by bringing the aerial image of the object into exact focus with the fine lines, which would approximately occupy the plane of the gelatine emulsion on the sensitive plate. If the above details have been properly attended to, there is no reason why the photograph should not be absolutely sharp. The lecturer advised the following as approximate exposures:—When using  $1\frac{1}{2}$  objective, 3 to 45 sec.;  $\frac{3}{4}$  objective, 7 to 90 sec.;  $\frac{1}{2}$  objective,  $\frac{1}{2}$  to 3 sec.;  $\frac{1}{4}$  objective, 2 to 7 sec.;  $\frac{1}{8}$  objective, 4 to 10 sec. Any developer which will give good contrasts is suitable. At the conclusion of the paper an excellent set of microscopic slides were shown, which fully bore out all that Dr. White had said in his paper.

**Great Yarmouth.**—The first summer outing was arranged for the 19th inst., and the spot selected was Leiston Abbey, near Saxmundham, Suffolk. Some of the more energetic members were stirring very early, and started by the 6.15 a.m. train for Darsham, whence they proceeded on tricycles to Dunwich, a distance of some ten miles through a very pretty part of the country which is justly called the Garden of Suffolk. At Dunwich a most beautiful view was obtained of the land and sea towards Southwold on the north, and of the old Abbey of the Grey Friars and the ruined church towards the south. The Abbey dates from the year 1227, and is surrounded by a wall still in good preservation. Many views were taken on the road when a fresh start was made for Leiston. The roads being good, and the country being just now clothed in all the beauty of spring, the run of seven miles was very pleasant. At 2 p.m. the whole party met, by arrangement, at the "White Horse," Leiston, where Host Johnson had provided a most sumptuous feed, to which due justice was done. Those members who had gone by train, via Saxmundham, had already visited the beautiful ruins of Leiston Abbey, which stand on rising ground about a mile from the village, and still afford many picturesque views, although sadly disfigured by the farm buildings erected in their very midst. The north aisle of the Abbey is now turned into a barn, and under the east window chicken sheds and pig styes disfigure the beautiful remains of this once noble structure. The farm itself is even built on a portion of the ruins, and the dairy stands within the once sacred walls. By the courtesy of the tenant, the members were able to obtain many fine views which it is hoped will prove satisfactory after development. The members then returned by different routes to Darsham station, whence a quick run brought them to Yarmouth, all agreeing that they had experienced a most pleasant and successful day.

**Ireland.**—The ordinary monthly meeting was held on 13th inst., Prof. J. A. Scott, Vice-President, in the chair. An extremely instructive demonstration of "Platinum Toning of Argentic Chloride Papers" was given by Mr. Alf. Werner. He said that the history of platinum toning was not a new thing. As far back as 1865 Caranza made public the results of his experiments, and he was followed shortly by many others, but all processes had been rejected until the advent of the gelatino-chloride paper, when the matter was

taken up by Mr. Lyonel Clark, and he published a process. The principal papers Mr. Werner had tried were Obernetter, Aristotype, and Celerotype, and Ilford printing-out paper. His method was to take the ordinary print out of the washing water and immerse it in a bath composed of potassium chloro-platinite and an acid, preferably an organic acid; mineral acids dissolved the image, and on that account he did not use them. Formic acid was too energetic; it reduced the platinite to metallic platinum in a very few hours. Any of the following acids would answer the purpose equally well, viz., acetic, oxalic, glycolic, succinic, tartaric, or malonic acid. Mr. Werner then toned a number of different makes of paper with unqualified success. He said the Ilford paper was slowest in action, on account of the hard gelatine used in its preparation. To convert the image totally into platinum, it was only necessary to prolong the toning until the print was completely black. In order to get clear whites he advocated the use of carbonate of soda before fixing. He found in practice that the proportions of each chemical for a bath might be guessed roughly, but for the guidance of the members gave the following formula: Potass. chloro-platinite, 1 drm., to 2 oz. water (stock solution); 10 gr., oxalic or other acid to 3 oz. water; to which add  $\frac{1}{2}$  oz. stock solution. At the conclusion of Mr. Werner's demonstration a number of lantern slides illustrating views on the Blessington steam tram line were shown by Mr. V. E. Smyth, who also exhibited and explained two hand-cameras, Rouch's and Ross's twin-lens camera.

**Kensington and Bayswater.**—A meeting was held on 23rd inst. There were present, in the chair Mr. H. G. Hannaford, and twenty-two other gentlemen. Mr. G. Bursnell gave a paper and demonstration on "Bromide Enlarging." Mr. Bursnell showed in a lucid manner how bromide enlarging may be done by either day or artificial light. His aim was to show that enlarging may be done with most simple apparatus and by very simple methods. In referring to the different developers, he believed that the most satisfactory results were obtained by taking the developer recommended by the makers of the paper used. He made some enlargements on the new rapid paper manufactured by the Eastman Photographic Materials Company, which proved upon development to give highly satisfactory results. Mr. Bursnell stated that where formerly he gave an exposure of one hour, with this paper he gives a few minutes only; this of course with a comparatively poor light. He recommended in all cases to make trial exposures, as there are so many factors which govern this important part of the work, the chief of these being the actinic power of light, the density of the negative, the presence or absence of stain, and the ratio of the stop. A committee was formed for the arrangement of out-door meetings and excursions for the coming season.

**Leeds Y.M.C.A.**—An interesting as well as instructive evening was spent on the 13th inst. by the members of the above club. "Bromide Printing" was the subject practically demonstrated, and a large number of the members brought negatives from which to print. A very pleasant hour was passed. Afterwards arrangements were made for a visit to Kirkstall Abbey next day (Saturday afternoon), which was also very successful, the day being all that could be desired from a photographer's standpoint, and several good results were therefore obtained.

**Lewisham.**—May 20th, Mr. Alf. H. Miles, Vice-President, in the chair. The meeting had been made special for alteration of rules, the most important proposition being that professionals should be admitted to the club as ordinary members (they can join as honorary members), but it did not find a seconder. Mr. E. Eastwood then gave a demonstration on toning "Ilford" P.O.P. He said he found the paper was different to that first issued, and it was necessary to print much deeper than before, and that, instead of printing to a reddish colour, it now assumed a purple tint, which was corroborated by several other members. He strongly advised that alum should always be used before toning, as it made the stripping more certain, and the prints could be mounted with a gelatine mountant without losing very much gloss, besides preventing the prints getting damaged during the various manipulations. He practically illustrated his remarks by toning, fixing, and stripping several prints, and passed round samples of the old and new paper, both untuned and toned.

**North London.**—On 17th inst., Mr. J. Douglas in the chair, the evening was announced as a technical evening, and was commenced by the Fry Manufacturing Company showing the different forms of the Griffiths hand-camera, which caused much interest, combining cheapness and convenience in working with very effective results. The principal subject for the evening was films, and specimens were shown of the well-known Fry films. Messrs. Edwards had sent some samples of their films, and Mr. J. D. England also sent some specimens of film negatives and film carriers. The Secretary, in giving his experience of film working stated that it had been practically confined to England's and Edwards' films, of both of which he spoke in the highest terms, showing negatives taken by himself, which fully bore out his opinion. Up to half-plate there was no



difficulty in using ordinary dark slides, provided the thickness of the glass were made up for by a piece of dark cardboard. A film carrier, made by the Secretary for hand-camera work, was shown, and the various advantages of films were fully discussed. Next meeting, June 7th, "Retouching," by Mr. Redmond Barrett.

**North Middlesex.**—On the 23rd inst., Mr. C. O. Gregory in the chair, Mr. Mummary read an admirable paper on "Gelatin-chloride of Silver Paper," showing examples on various brands of paper toned by the different formulae. He then gave a demonstration of the process, and answered questions on technical points. Competitions of views at the last three field-days were then held. Votes of merit were awarded as follows:—"Edgware," Mr. S. E. Wall; "Chigwell," the Secretary; and "Chingford," Mr. S. Barnard. The winning prints will be exhibited on the walls of the meeting-room for a few weeks, and finally preserved in the society's album. A number of the first two issues of *Photographic Work* were distributed among the members, old workers expressing their satisfaction at finding Mr. Bolas once again associated with the staff of a photographic journal. The next meeting will be held on Monday, June 13th, when Mr. F. E. Jones will demonstrate the Platinotype Company's new cold-bath process. Visitors will be welcome.

**Putney.**—The annual general meeting was held on the 17th inst., Mr. W. J. Sheppard in the chair. A satisfactory report was read and adopted. The Hon. Secretary expressed his regret that he would be unable to continue the Secretaryship, as he was leaving the neighbourhood. The following officers were then elected:—President, the Hon. Baron Pollock; Vice-Presidents, Rev. L. Macdonald and Dr. W. J. Sheppard; Council, Dr. J. F. Farrar, Messrs. H. Faulkner, T. Gilbert, and Charles Ballard; Hon. Treasurer, Mr. Wm. Martin, jun., 4, Lower Parkfield; Joint Hon. Secretaries, Mr. L. S. Zachariassen (Alfred Villa, Putney Bridge Road), Mr. W. F. Gorin (3, Montserrat Road).

**Stockport.**—The adjourned annual meeting was held on the 18th inst. The following is the new list of officers:—Mr. Thos. Kay, J.P., President; Mr. W. B. Leigh and Col. H. Turner, J.P., Vice-Presidents; Mr. B. S. Harlow, Secretary; Mr. H. J. Robinson, Assistant-Secretary; Mr. Thos. Bedford, Treasurer. Council: Messrs. G. H. Broome, F. G. Brooke, H. N. Cooper, O. Coppock, H. D. F. Dobson, A. M. Gourlay, G. Hiderley, H. G. Heginbotham, and S. Kay. A list of excursions for the first half of the season was arranged, the first being to Alderley on the 28th inst.

**Tyneside.**—The first excursion of the summer session was on 7th inst., to the ancient city of Durham. There was an excellent attendance of ladies (who used cameras) and gentlemen. Very little time was spent on the railway journey, as express train was used each way. There was some difficulty at first by the railway company refusing to carry a photographic club at pleasure party rates, but after some "red tape" business was gone through, they granted the pleasure party fare. The North Eastern Railway Company state that it is the first application they have had from a photographic club. At Durham, the castle, the cathedral, river, and other objects of interest (of which the place abounds) had numerous plates exposed on them. When the club kept together, the large array of cameras (all sizes, shapes, and colours) on several occasions attracted a large crowd of curious and inquisitive persons—chiefly miners "on strike."

**Wigan.**—The last lantern exhibition of the season was given on the 8th inst. before a good audience of members and friends. The first slides shown were those contributed to the members' slide competition, which had been adjudicated upon by Mr. Sturmer, and before throwing the pictures on the screen, the Vice-President, Mr. Lowe, read that gentleman's report thereon, when it was found that Mr. J. H. Atherton was placed first with slides of "Chester Cathedral" and "Ruins of St. John's Priory, Chester;" Mr. F. Betley second with "The Nave, Worcester Cathedral," and "In Harborne Churchyard;" and Mr. C. R. S. Kirkpatrick third with "After a storm, Tenby" (the best slide in the competition), and "Criccieth Beach." In all there were six competitors. These slides were followed on the screen by others by the following members:—Messrs. Kirkpatrick, Hartley, Lowe, and Betley, after which the American slides were shown. The lantern was worked by Mr. J. Hodgson with his accustomed ability, and with the assistance of Mr. J. Leigh.

**Woolwich Polytechnic.**—A photographic section of above Institute has been formed. The following are the officers elected:—President, Mr. A. R. Dresser; Vice-Presidents, Mr. A. Young and Mr. F. Didden. Committee: Messrs. Perry, Kemp, King, Smyth, Godfrey, and Daniels; Secretary, W. Dawes. The first ordinary meeting was held on the 18th inst., Mr. Young in the chair. Several sets of apparatus were exhibited by the members, and a set of lantern slides, lent by the Editor of the AMATEUR PHOTOGRAPHER, were passed through the lantern. The attendance was very good, and a very enjoyable evening was spent. Next meeting to be held on June 1st at 8 p.m.

## SOCIETIES' FIXTURES.

- May 26.—BIRMINGHAM PHOTOGRAPHIC SOCIETY.—Mr. Leeson will give a demonstration and paper entitled "Preparation of Home-salted and Sensitised Paper by the Ammonia Nitrate of Silver Process," Midland Institute, 7.30.
- " 27.—CROYDON.
- " 27.—HOLBORN CAMERA CLUB.—Lantern Night. Please bring your friends and your slides.
- " 27.—RICHMOND CAMERA CLUB.—Show of Prints.
- " 28.—PAISLEY PHOTOGRAPHIC SOCIETY.—Excursion to Kilwinning and Eglington Policies. Train, Canal Street Station, 1.25.
- " 28.—WEST LONDON PHOTOGRAPHIC SOCIETY.—Excursion to Hampstead Heath, 3.30. Cycling division meet at head-quarters 2.45, or Askew Arms, Uxbridge Road, 3 p.m. Tea at "Bull and Bush."
- " 28.—BRIGHTON AND SUSSEX NATURAL HISTORY AND PHILANTHROPIA SOCIETY.—Excursion to Cuckfield (Hayward's Heath), 1.25.
- " 28.—STOCKPORT PHOTOGRAPHIC SOCIETY.—Excursion to Alderley; Leader, Mr. H. J. Robinson.
- " 28.—ELIZABETHAN PHOTOGRAPHIC SOCIETY.—Outing to South Mymms.
- " 31.—CLEVELAND.—Photographic Outfit.
- June 1.—ISLE OF THANET.—Social Meeting.
- " 2.—LEEDS.—"Printing-in Clouds in Lantern Slides," Mr. F. W. Branson.
- " 2.—LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.—"Tele-Photographic Lenses," Mr. Thos. R. Dallmeyer.
- " 3.—CROYDON.
- " 3.—LEWISHAM HIGH ROAD CAMERA CLUB.—Demonstration, "Practical Photography," by Mr. H. Bedford Lemere.
- " 3.—HOLBORN CAMERA CLUB.—Discussion, opened by Mr. H. West, "Hints on Landscape Photography."
- " 3.—PEOPLE'S PALACE PHOTOGRAPHIC CLUB.—Technical Evening.
- " 3.—RICHMOND CAMERA CLUB.—Informal Meeting.
- " 4.—WEST SURREY PHOTOGRAPHIC SOCIETY.—Outing to Ashstead.
- " 4.—GRAPHIC SOCIETY (Plymouth).—Excursion to Restormal; Director, Mr. Hawker.
- " 4.—OLDHAM PHOTOGRAPHIC SOCIETY.—Outing to Rochdale for Healey Dell; Leader, Mr. J. Hilton Ashton.
- " 4.—LIVERPOOL AMATEUR PHOTOGRAPHIC ASSOCIATION.—Excursion to Speke and Hale (half-day).

Mr. Valentine Blanchard, our well known contributor, has retired from London and is settling down for a country life, and will devote the whole of his time to literature. We regret to lose his presence from London, but trust that he will still be able to render us and our readers valuable assistance by his pen.

M. Lippmann has submitted four natural-coloured photographs to the Paris Academy of Science, which faithfully represent a stained-glass window of four colours, a group of draperies, a plate of oranges surmounted by a red poppy, and a many-coloured parrot from Australia. These showed that the shape is represented simultaneously with the colours. The draperies and the parrot required from five to ten minutes' exposure to the electric light or the sun; the other objects were only obtained after many hours of exposure to a diffused light on one of M. Lippmann's photos; the blue of the sky comes out rather as indigo than blue; but it should be remembered that this is the first attempt, and there can be little doubt that the true blue of the sky will soon be obtained. The natural green of foliage is accurately rendered. There is no lovelier thing in the world than the solar spectrum, and M. Lippmann has succeeded in photographing this in all its beauty after an exposure of half a minute.



The *Boston News* says: "The fifth annual joint exhibition of the Photographic Society of Philadelphia, the Society of Amateur Photographers of New York, and the Boston Camera Club opened yesterday. No pains have been spared to make this exhibition surpass all preceding ones. The exhibition, as a mere display of beautiful views, is in the highest degree interesting, but it has, likewise, an immense value as showing the possibilities of modern photography. When we come to such marine views as those by Clement Williams, F.R.I.B.A., of England, we may almost be excused for doubting in the first place whether they are really photographs, and then for preferring them to a great many marines done on canvas by people with reputations. There are nearly 700 photographs and a number of lantern slides in this collection, and it is entirely out of the question to single out those worthy of praise."

**The Photographic Survey of Warwickshire.**—The formal presentation of the photographs which have been taken by members of the Birmingham Photographic Society in prosecution of the scheme for a photographic survey of Warwickshire, to the Mayor for safe custody on behalf of the citizens, was made on the 14th inst. at the Art Gallery, where the survey pictures are now on exhibition. The presentation was made by Mr. J. B. Stone, as President of the Birmingham Photographic Society, and, in addition to the Mayor, there were present Alderman Johnson (Chairman of the Free Libraries Committee), and Messrs. J. Satchell Hopkins, S. H. Baker, H. S. Pearson, Joseph Hill, John Collier, Whitworth Wallis, A. B.

Chamberlain, and several of the gentlemen who have contributed to the collection. In the evening the Council of Survey, on the invitation of Mr. J. B. Stone, met the Mayor at dinner at the Colonnade Hotel, in celebration of the presentation of the first instalment of the photographic records. Among the guests were Messrs. J. H. Stone, Jonathan Pratt, Alfred Hayes, J. Simkins, J. A. Bagnall, J. F. Mousley, F. G. Lyndon, W. J. Harrison, Whitworth Wallis, E. H. Jaques, W. Roche, W. Buncher, Joseph Hill, H. Baker, E. H. Leeson, J. H. Pickard, W. S. Horton, John Collier, E. W. Badger, A. R. Longmore, W. Jones, E. C. Middleton, etc. The President expressed the regret at inability to be present of Alderman Kenrick, M.P., Alderman Johnson, the Rev. W. K. R. Bedford, and Messrs. Richard Tangye, Sam Timmins, Jethro A. Cossins, and A. W. Still, nearly all of whom had written expressing their warm appreciation of the work of the survey.

**THE LADIES' COMPETITION.**—We shall publish the award of the judges, Messrs. Valentine Blanchard and J. A. Hodges, next week, and give reproductions of some of the pictures. We also hope to announce the result of the last Quarterly Examination, but the gentleman in whose hands the matter has lain has been ill.

## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Greed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

## QUERIES.

5694. **Iford P.O.P.**—Would some one kindly tell me how I could obtain jet black tones on the new Iford paper? Have used the Company's formula for toning, but fail to get anything deeper in colour than a slatey black.—A. W. KERROW.

5695. **C. de V.**—Will any amateur kindly tell me how I could enlarge from a photograph, c. de v., without a negative?—W. S.

5696. **Stop.**—Will any amateur kindly tell me when a large stop and a small stop is used?—W. S.

5697. **Toning Bath.**—Can any reader give me the formula for a good toning bath which will keep for some time? I want a bath for purple or black tones. Please do not refer me to any book numbers, as I have none available.—ONE IN A FIX.

5698. **Intensifying.**—Would someone kindly give me the formula for "Uranic Intensification," and is that the best for general use?—BLOSSOM.

5699. **Cycling.**—Will anyone who has used a hand-camera on a cycling tour say if the action of the magazine principle is deranged by the vibration and jolting of the machine?—T. A.

5700. **Dubroni's Camera.**—I came across a camera by Dubroni for wet-plate, an expensively made article. The shutter or dark-slide has ruby screens, is lined with porcelain, has a hole at side to insert a 3-in. glass tube apparently to sensitise as used. Will the Editor or any reader explain its use?—LUXOR.

5701. **Hardcastle's Platinum Paper.**—Would someone kindly give me some information about the process of working this paper? The directions with the paper are very meagre. I cannot get a good print. What kind of a negative is best? How deep should I print? Should they be printed in bright sunlight only? I cannot get the yellow colour from the print when fixing, yet I follow the directions. Any information will oblige.—G. C. D.

5702. **N. Wales Walking Tour.**—Can anyone oblige with particulars of a photographic walking tour in N. Wales to last about a fortnight; also probable cost? Friend and self not afraid of covering ground.—RUETAMA.

5703. **Snap-Shot Developer.**—Will someone oblige with formula for a good snap-shot developer? Must give fair density, and be of fairly quick action.—RUETAMA.

5704. **Exposure Meter.**—Will some kind reader oblige me with full particulars of Watkins' exposure meter? I should like to know how it is worked, and how the correct exposure is obtained. I am thinking of buying one, but should like to know something about it before doing so. Any information would oblige.—WILL.

5705. **Whitby.**—Shall be glad if any information respecting Whitby. Is there a dark-room there, etc.? I intend spending a few days there at Whitsuntide.—PYRO (address with Editor).

5706. **Printing.**—I have double albumenised paper which I sensitise as I require, but which does not print up so clear as I desire. Can any reader instruct me best procedure to treat same.—LUXOR.

5707. **Exposure.**—Will someone kindly tell me about the correct exposure for copying c. de v. photographs to cabinets, indoors, light good, R.K. lens, 32/f, plates Iford ordinary; and will exposure be less copying same size? An answer will greatly help.—W. P.

## QUERIES UNANSWERED.

May 6.—Nos. 5660, 5662.

" 13.—Nos. 5670, 5672, 5673.

" 20.—Nos. 5680, 5681, 5682, 5683, 5684, 5687, 5688, 5689, 5690, 5691, 5692.

## ANSWERS.

5555. **Background.**—Backgrounds for vignettes are usually plain coloured, and almost any photographic dealer would supply you with stuff specially sold for this purpose, or you could obtain blind material from any upholsterer.—F. WALKER.

5568. **The Wye Valley.**—See "Index," p. 408, last week's issue.—F. WALKER.

5577. **Exposure.**—The exposure required would be about ten minutes. The distance can only be given when the focus of lens is known.—F. WALKER.

5578. **Making Lantern Slide.**—About five minutes.—F. WALKER.

5588. **Lowestoft.**—See "Index," p. 403, last week's issue.—F. WALKER.

5598. **Tags.**—Cut similar pieces of leather and cut out remains of old ones; glue or nail in.—F. WALKER.

5607. **Edwards' Films.**—These are very easy to work and are as rapid as any plate in the market.—F. WALKER.

5621. **Battle Abbey.**—Permission may be had, I think, from a stationer's shop just opposite the gateway.—F. WALKER.

5625. **Bromide Paper.**—See "Note on Enlarging," p. 337, April 29.—F. WALKER.

5628. **White Faces.**—This is a little incomprehensible. Sometimes the faces look white by reflected light, when the silver is deposited in a bright allotropic state.—F. WALKER.

5641. **Photographing Athletics.**—Write to the Secretary of some athletic clubs and state what you want; probably you would be more likely to get it if you promised the club prints from your results.—F. WALKER.

5642. **Printing Illustrations.**—Wilkinson's "Colotype and Photo-engraving," price 5s., is the best book on the subject, and would tell you all you want to know.—F. WALKER.

5646. **Exposure, etc.**—Take your locomotive in the shade, and give about 5 sec. exposure.—F. WALKER.

5653. **Studio.**—Get Robinson's book, "The Studio, and What to Do in it," and consult a local carpenter for prices, or else Davenport and Co., 32, Parkhouse Street, Camberwell, S.E., have good cheap studios for sale.—F. WALKER.

5662. **Isle of Wight.**—See "Tourist's Index," p. 408 A. P., May 20.—F. WALKER.

5678. **Somerset.**—Bath, Wells, Cheddar, Wookey, Shepton Mallet, Glastonbury, Taunton, and Bridgewater are all interesting photographically. To photograph the interior of Tintern Abbey, apply to the custodian, where you pay for admission.—W. H. H.

5679. **Southend-on-Sea.**—Dark-room on moderate terms offered by W. H. Simons, 5, Wesley Road, York Road, Southend.—EDITOR.

5685. **Windsor.**—No permission required to take exterior of Castle from the Brocas or Home Park. For Windsor Great Park permission must be applied for to Captain W. Campbell, Holly Grove, Windsor Park. It is available for fourteen days only.—W. H. H.

5686. **Kew and Richmond.**—For Kew, apply to the Director, Royal Gardens, Kew; for Richmond Park, to H. W. Primrose, Esq., Office of Works, Whitehall, S.W.—W. H. H.

5693. **Arran.**—Abundance of work for the camera in Arran. If private lodgings cannot be had, it is preferable to put up at an hotel, to save trouble. Corrie, Brodick, and Lamish have each accommodation for strangers. The small glens, which one meets everywhere on the island afford any amount of "pretty bits" for the camera. Gleneloy, Glenrosa, Glensannox all within reach of Brodick. In fact, the best thing to do is to carry the camera always with you, and roam about all over the island. Conveyances from Brodick to north and west, and from Lamish to south of the island. Buy a map of the island and study it. Never heard of a dark-room in the island, but no doubt you could extemporise one, as the houses are not palatial by any means. With good weather it is an easy matter to capture a score of interesting and pretty bits every day.—SARDONYX.

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S POST if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED. AM. PHOT.

W. M. GEORGE.—(1) Neither the pose nor expression is good, but technically the best print. (2) Too much foreground, insufficiently developed, over-exposed, too artistic, over-toned. (3) Over-exposed, over-printed, over-toned. (4) and (5) Over-exposed and over-toned. (6) Not sharp enough, over-exposed, and over-toned. (7) Over-exposed, over-printed, over-toned (8) Paper shifted in printing. (9) Very fair. What fearful exposures you give, simply outrageous! Use an ordinary rapid plate for general landscape work, discard hydroquinone and try pyro, don't carry toning so far. If you like to send us an exposed plate or two, we will develop them for you. Prints returned.



**BERRIE.**—(1) Fearfully under-developed; intensify it. (2) Over-exposed and under-developed. (3) Over-exposed and under-developed. (4) Far too much foreground. What on earth is the curious marking all over the print? It looks as though you had placed the plate in contact with impure paper; and your dark-slide hinge wants looking to. (5) Under-developed. (6) Ditto, and should have been taken in shade. (7) Over-toned. (8 and 9) Ditto. (10) Too much uninteresting foreground, and the horizon line cuts the picture in two. In answer to your questions—(1) Place the prints after toning into a bath of salt and water, and add  $\frac{1}{2}$  oz. of bicarbonate of soda to every pint of fixing solution. (2) The cause of the small red spots is not definitely settled. It may be due, however, to your touching the paper with greasy fingers, but is probably due to something in the manufacture. (3) Let us know where the leak is in your dark slide. Finally, give up hydroquinone for pyro, and send us up two exposed plates, and we will develop and print from them for you.

**WALTER.**—You cannot do better than take the hand-camera you mention; it is very capable and good.

**INK.**—(1) You must vary the method of using the pencil according to the size of head and particular parts. Obtain "The Art of Retouching," price 1s., from our publishers, which will give all the information you want. (2) If you refer to our hack numbers you will see that we have had a series of articles running for some time on "Enlarging," which would tell you as much as we can. If your negatives are quarter-plate, and you are content to use the central portion only, then you can use a 4 in. condenser in ordinary jappanned lantern. (3) The peculiar distortion you have noticed is due to the cutting of the paper. You will find that all paper expands and stretches more in one direction than another. If you notice, you will find that the distortion appears when you use two pieces of paper, the one cut from the width, the other the length of the paper.

**F. D. TODD.**—Thanks for card and contents, noted. Yet in face of the fact you mention, some of our readers want us to abide by the popular vote; we say this is not always correct. We congratulate you, and should like to see you compete in our "Photography at Home" Competition.

**J. B.**—Not more than twelve or less than six prints will be required for the "Holiday with the Camera" Competition.

**O. N. F. KELLY.**—(1) For cloud work use a colour-sensitive or Isochromatic plate. Of the ordinary we like 1, 3, 5. (2) A Keep down the pyro and bromide, and don't eary development very far; obtain thin negatives. (3) Commence development with  $\frac{1}{4}$  gr. pyro, normal bromide, normal ammonia. As soon as all detail is out, use a strong, well-restrained developer (full-strength pyro, 4 gr. to ounce; bromide, 4 gr.; ammonia, 2 gr.) till density is obtained. (3) Yes, far superior. (4) No, we do not like them so well. (5) Yes, colour-sensitive plates are better, and if there is intense blue sky use a light yellow screen. (6) The pure sodium carbonate,  $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$  is meant; the excess of  $\text{K}_2\text{CO}_3$  is intentional.

**J. S. T.**—We believe the fault is in the toning bath. Try using it weaker, or if you will print a few pieces of paper, and call and let us tone them for you, we shall be glad to do so.

**W. R. P.**—Eikonogen is not a suitable developer for copying. For enlarging the best formula is Chapman's eikon. cum hydro—

|                          |        |
|--------------------------|--------|
| Quinol                   | 40 gr. |
| Eikonogen                | 120 "  |
| Sodium sulphite          | 480 "  |
| Citric acid              | 20 "   |
| Distilled water, to make | 20 oz. |
| Potassium bromide        | 5 gr.  |
| Sodium carbonate (pure)  | 60 "   |
| Sodium hydrate           | 30 "   |
| Distilled water, to make | 20 oz. |

Mix in equal proportions, and add an equal quantity of water.

**A. B.**—We ask our competitors to give full information. We are afraid we cannot disqualify them for not doing so.

**TRIX.**—Your work ehows promise, and if you get some decent negatives as a standard to work by, you will soon improve. (1) You can use ferrotype plates to squeeze your print down on, and they will not stick then, and not have such high gloss. (2) Yes, bicarbonate of soda is the right salt to add to the toning bath, but we should add 10 gr., not 3. Provided you keep your bath alkaline it will work for years if the gold is replenished from time to time. (3) Yes, we have tried the paper, and like it.

**C. OLIVER.**—Hydroquinone is not the best developer for bromides; it always has a tendency to greenness. If you want a simple developer, try Rodinal. This has given us some splendid results on bromide paper. Both your prints are under-exposed. Try 75 sec. for No. 1 at 18 in., and 100 sec. at 2 ft. for No. 2.

**T. A.**—Fluless blotting paper is used to dry prints, negatives and films, whilst wet so as to absorb the surplus moisture, and let them dry quickly and evenly.

**FRANK.**—Print spoilt by sun printing, and far too much foreground.

**W. C.**—The prints are hardly up to our illustration standard.

**S. R. P.**—The print would be admissible.

**J. E. B.**—Print deeper, and carry toning till on looking through the print all shade of red is lost in the shadows.

**E. H. MIDGELEY.**—We will look into the matter of your letter; we only spoke from recollections of having decomposed sulphocyanate, and having smelt a cyanogen compound.

**A. ANDREW.**—We should choose No. 1 for films, No. 2 if size is no object, but if it is, then No. 7.

**OMEGA.**—(1) Lancaster's Miltum in Parvo would answer as well as the special room, and you would not need a lantern at all; you would merely put the negative at one end, the sensitive paper at other, and point to the sky—or else burn magnesium ribbon behind the negative. (2) Bromide paper can be used only, but obviously if you use a small positive and enlarge on to plate you will get an enlarged negative from which you can print on anything. (3) There is practically no difficulty in using the large camera for instantaneous work, the finder can always be fitted on to the side of the camera baseboard, outside the focussing cloth. (4) We are afraid you want too much for your money. Probably the cheapest way to set to work would be to buy a hand-camera second-hand, or else one like Chadwick's to which you could fit your own lens. You will hardly get one with doublet under £5 5s. (5) The disadvantages of using half-plate lens on quarter-plate for snap-shot work is that the longer the focus of lens the less the relative depth of focus, and the greater the displacement of image on the screen, and therefore the more rapidly the shutter will have to work. It is used sometimes, however.

**W. TRANTER.**—Kallotype paper is the simplest method of getting black tones, and may be had either matt, or albumen surface.

**E. C. FORSDYKE.**—If you like to send up a list of hand-cameras, we will try and help you, but it is obviously unfair to ask us to single one out as you have none done.

**H. M. S.**—Letter by post.

**J. R. MATTHEWS.**—No, you may show as much or as little of the figure as you like.

**F. W. WALTER.**—Write to the Editor of *The Stage*, and ask him about "Maria Martin." We know the piece, of course, but certainly recall the locale.

**J. B.**—We should prefer O.S. or T.T.H.N., and you might try on the Exchange Rooms.

**D. F. NICHOLL.**—(1) The water is too white, and wants sunning down. (2) Very good, but could you not have taken this the other way of the plate, so as to have got in the top of the tree? (3) Spoilt by the curious blaze of light in the distance. (4) Good. (5) See note to 1. (6) Far too patchy and muddled. (7) Very good. (8) Ditto. (9) Your white houses are too white. 2, 7, and 8 are far above a lot of work sent in. You ought to stand some chance.

**H. S. SMITH.**—We don't think the waterproof paper is sent out gummed by anyone. We should certainly say that the Zeiss Anastigmat series IV, of 7 11-16ths in. focus, would be the most suitable focus. Shorter than this will give you distorted perspective.

**WISEACRE.**—The acid fixing bath is made by adding 1 oz. of acid sulphite of sodium lye, sold by Marion's, 23, Soho Square, under the name of theonine. We do not know to what lenses Mr. Hodges referred. Send a list of lenses and size of plate you would use it on, and we would suggest some.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence.

Every additional three words, one penny. The name and address of the sender must be paid for.

(A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word: compound words count as two words.)

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the *AMATEUR PHOTOGRAPHER*, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m., and other communications having reference to the Sale and Exchange) column, must be addressed "Sale and Exchange, *AMATEUR PHOTOGRAPHER*, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**COMMISSION.**—A charge of 2 1/2 per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to *Hazell, Watson, and Viney, Ltd.*, 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, *AMATEUR PHOTOGRAPHER*, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2 1/2 per cent., upon the sale price of the apparatus.

**Bicycles, Tricycles, etc.**—1892 Humber pattern, diamond frame Safety, cushion tyres, hails all parts, hall head, hall pedals, long base, richly plated, combination saddle, and accessories, handsome machine, in grand order, cost £15 10s., accept £8 10s., great bargain—Gresham, 35, Kimherley Road, Nunhead, S.E.

**Burnisher.**—Burnisher, 12 hy 10, complete, cost 60s., price 25s.—Buck, 73, North Street, Colchester.

Marion's 9 in. roll for gas, good condition, cost 25s., best offer over 10s. Wanted, rolling press.—Hodd, 4, Goldsmith's Gardens, Acton, N.

**Cameras, etc.**—Whole-plate camera, new, bes make, all movements, three double slides, £5 5s.—Evans, Stationer, Conway.

Half strong camera, swing and reversing hack conical leather bellows, two slides, and tripod, 37s.—Thornton, Bromley Road, Beckenham.

**Cameras, Lenses, etc.**—Half-plate camera, leather bellows, slide, and screen, complete, all latest improvements, and lens with iris diaphragm, nearly new, perfect, 60s.—Buck, 73, North Street, Colchester.

Camera, Spanish mahogany, three double slides, book shape, 7 1/2 hy 4 1/2, in leather case, one-third cost, 33s.; good cabinet burnisher, 9s.; Stirn's walnut hand-camera for 25 films, quarter-plate symmetrical lens, double shutter, bargain, 30s.—Lyne, 135, London Road, Croydon.

Wray's rapid landscape lens, whole-plate, cost £3, sell £2; Optum R.R. 7 by 5, cost 49s. 6d., sell 35s.; Watson's 7 1/2 hy 5 Tourist camera, three double slides, R.R. lens, 7 1/2. 6d.; best conical bellows, half-plate set, double slide, R.R. lens, stand, as new, cost £5 5s., sell 75s.; Sands and Hunter's whole-plate burnisher, cost £2 2s., sell 20s.—Parlhy, Craddock Street, Swansea.

**Enlarging Apparatus.**—Enlarging apparatus (Stereo. Company's new) for quarter-plate and half-plate negatives, cheap, £6, cost £16; no exchange.—J. A. E., 12, Evelyn Gardens, London, S.W.

**Hand-Cameras, etc.**—Stirn's pocket camera with plates, quite new, 15s., or exchange.—H. Norman, Chayne Walk, Northampton.

£11. Swinden's Stereoscopic Company's Artist hand-camera, guaranteed, perfect condition, with three extra hacks and solid leather travelling case, recently cost £19 4s. net.—Dr. Whitaker, Westhoughton.

For sale, Kodak No. 3 Junior with film, case, £6 10s., good as new; approval; deposit.—E. Phillips, Bridge Street, Leatherhead.

Hand-camera (Swinden and Earp's), morocco case bonnd, Kershawshutter, excellent Laverne lens, works f/7, cost £7 two months ago, holds 20 plates, new, price £5. Offers?—Thompson Bell, Byron Street, Leeds.

The Vanneck, hy Watson, solid leather outside case with shoulder strap, cost £11 10s. What offers? Approval; deposit.—W. McIntyre, 12, Burlington Road, Birkdale, Southport.

Beck hand-camera, R.R. lens, iris diaphragm, Newman's shutter, six double hacks, good condition, £6.—Field, Montana, Blackheath.

Exhibition Facile hand-camera, exhibited at Newcastle and London, £4.—Field, Montana, Blackheath.

Artist's hand-camera, 3 1/2 hy 4 1/2, cost £10 10s., London Stereoscopic Company's latest, with three slides, 7 doz. Carbutt's flexible negative films, two printers, five vulcanite trays, toning bath, case of sensitised papers, lamp, etc., complete, price £7; also Stirn's Secret camera, with case fitted with chemicals, lamp, etc., 30s., or the whole £8, all brand new.—No. 293, office of this paper, 1, Creed Lane, E.C.

Talmer hand-camera, new few months ago, specially covered with black leather, holds 12 quarter-plates, in perfect condition, cost 55s., sell for 40s. Can be seen at Lloyd's (late Newton's), 5, South John Street, Liverpool.

Griffiths' hand-camera, with finder, cost 25s., sent free for 18s.; quite new.—Jeremiah Deane, Camp Post Office, Tralee, Kerry.

For sale, No. 5 Kodak folding camera, fitted with legs to work time exposures. To be seen by appointment with L. Ashburner, 9A, Gloucester Place, Portman Square.

The Itakit hand-camera, good as new, price 9s.—S. Smith, 29, Fosse Road, Leicester.

Hand-camera, price £1, or £1 5s., with plates.—H. B. Smith, Brooklands, Broughton, Preston.

Talmer hand-camera, in splendid condition, cost 55s., will sell for 30s.—H. G. S., 92, Carleton Road, Tufnell Park, N.

Stereoscopic Company's Dispatch hand-camera, six double hacks, Newman's shutter, equal new, cost £12 15s., price £7.—Bygrave, 13, Canterbury Road, Brixton, S.W.

Optimus 6 guinea detective camera, lantern size, three double hacks, rapid Euryscope lens, for £4; never used; approval on deposit.—P., 41, Moore Street, S.W.

Optimus hook hand-camera, R.R. lens f/6, three double hacks, leather sling case, cost £6 10s., for sale or exchange. Want 12 hy 10 dishes and printing frames.—Kilburn, West House, Bishop Auckland.



Talmer R.R. automatic quarter-plate hand-camera, £3; Fallowfield's Facile, with sunk finder and level, £8.—Photo., 15, Cheapside, Derby.

**Lenses, etc.**—Optimus 7 by 5 R.R. lens, almost new, will take 37s. 6d.—No. 294, office of this paper, 1, Creed Lane, E.C.

Ross 8 by 5 rapid symmetrical lens, with Sandeand Hunter's shutter, in perfectly new condition, price £5 5s., cost £7 10s.—Walker, 15, Elm Place, S.W.

Cabinet portrait lens, rack and pinion, splendid definition, only 50s.—Leithead, West Hartlepool.

Lerebours whole-plate lens, 24 in. focus, equal to new, bargain, 14s.; approval on deposit.—B., 29, Myrtle Road, Leicester.

Half R.R., covers whole-plate, £2, good definition; quarter R.R., iris, 25s.; King's hand-camera, 25s.; and lot of sundries very cheap. Send at once.—F. Holloway, 15, Pritter Road, Bermondsey.

For sale, half-plate portrait lens, in perfect condition, 50s.; approval on deposit.—Frank Litchfield, 51, High Street, Newport Pagnell.

Half-plate rectilinear lens, portrait or landscape, good as new, cheap, 17s.—J. L. Tongh, 9, Montrose Road, Forfar.

7 by 5 Optimus R.R. lens, £2; Taylor's half-plate R.R. lens, 55s.; Kershaw's shutter to fit ditto, 12s.; 5 by 4 Optimus R.R. lens, 25s.—Photo., 15, Cheapside, Derby.

Optimus rapid EuryScope, 9 by 7, cost a month ago 126s., will take 97s. cash (lowest); approval; deposit.—S. P., 7, Madeira Terrace, South Shields.

**Sets.**—Half-plate camera set, with double back and tripod, 30s.; quarter-plate portrait lens, 15s.; whole-plate leather case, 8s.; 9 ft. sheet and frame, 10s.; set lantern slides, 46 Paris, 15s.—Buckley, Brown Lodge, Smithy Bridge, Rochdale.

Quarter-plate camera for hand or stand, for use with ordinary lens, focussing screen, swing back, rising front, long extension, finder, three double slides, alpenstock tripod; approval; price 55s.—19, Old Elvet, Durham.

Lancaster's quarter-plate Instantograph, iris lens, instantaneous shutter, folding tripod, three double dark slides, waterproof canvas knapsack, developing trays, printing frames and sundries, 35s.—H. P., 64, Romilly Road, Finsbury Park, N.

Half-plate Abney camera, three double backs, Ashford tripod, all quite new, only used a few times, cost £6 15s., price £5; only reason for disposing, require whole-plate apparatus; sent on approval.—S. Powell, 23, Eaton Place, Brighton.

Quarter-plate Lancaster's special patent brass-bound, three double backs, rectigraph and wide-angle lenses, tripod, turntable, four quarter-plate dishes, and one printing frame.—Rintoul, 12, Patshull Road, Kentish Town.

Quarter-plate camera, all movements, and three double slides, with Beck's R.R. and W.A. lenses, in canvas knapsack, for £5; mahogany stereoscopic camera, three double slides, and R.R. lenses by Dallmeyer, for £2; Ramsden's patent tripod, 5s.—F. Byles, Ashfield, Bradford.

15 by 12 camera, London Stereoscopic Company's best make, three double dark slides, best iris, R.R. lens, leather travelling cases, price moderate.—Apply, Sir G. Clerk, office of this paper, 1, Creed Lane, E.C.

Complete £10 10s. half-plate photographic outfit, by Stereoscopic Company, condition as new, £5 5s.—C. W. White, Hillside, St Germain's Road, Forest Hill, Kent.

Best half-plate camera, with three double dark slides and case, stereoscopic rapid rectilinear lens, with iris diaphragm, Thornton-Pickard shutter, Ashford stand and case, all accessories, equal to new, price £8; deposit.—E. Kroeger, 3, Edmund Place, Aldersgate Street.

Combination portrait, copying, and enlarging camera, with condenser, lamp, and rack lens, £3s. 6d.—M. Newhouse, 90, Victoria Terrace, Lancaster.

Half-plate Optimus wide-angle camera (long focus), with three double dark slides, £7 10s.; leather case for ditto, 10s.; 7 by 5 Optimus R.R. lens, £2; tripod stand, 15s.; the set complete, £10; quarter-plate Optimus portable camera, with double dark slide, £3 15s.; 5 by 4 Optimus R.R. lens, 25s.; and tripod, 7s. 6d.; the set, £5.—Photo., 15, Cheapside, Derby.

Half-plate set, complete, for sale, quite new, camera, three double backs, lens, tripod, and focussing cloth, all contained in leather case, cost £13 10s. What offers? May be seen at the office of this paper.—D. F. C., 17, Montague Street, Russell Square, W.C.

Lancaster's half-plate Instantograph, with lens, stand, and cases, instantaneous shutter, two dark slides, price £4, cost £6 6s.; on approval.—H. B. Smith, Brooklands, Broughton, Preston.

**Bargains!** 5 by 4 mahogany bellows-body camera and slide, a folding ash tripod, and a splendid quarter portrait lens, believed to be by Grubb; first 12s. gets it.—Jones, Bryn-yr-Haul, Mold, N. Wales.

Whole-plate camera, long extension leather bellows, rising and sliding front, swing back, two double dark slides with carriers, R.R. lens, giving splendid definition, tripod stand, etc., in neat case, £6 6s. On view at 54, Lime Street, City.—Forsyth, 31, Saxon Road, South Norwood.

Splendid whole-plate camera set, complete, as new, photographic sundries, Optimus EuryScope lens, as new. Stamp for particulars to W. Jones, Enfield House, Uffculme, Devon.

Half Lancaster's Instanto camera, lens, shutter, three dark slides, tripod, complete, first-rats order, 72s.—R. L. H., 30, Ash Grove, Cricklewood, N.W.

Giving up photography. 1888 half-plate Instantograph, three slides, complete, in case, quarter-plate Merveilleux set, Self shutter, Ross' No. 2 portrait lens, etc. Seen by appointment.—Cockburn, 28, Great Marylebone Street, W.

Complete set, half-plate long extension camera, fitted view-finder and level; four mahogany backs in cases; three metal backs; Watson's cyclist tripod; Optimus R.R. lens; Thornton-Pickard shutter, time and instantaneous; 12 feet best rubber tubing extra; mahogany drop-shutter; pneumatic release; dark box for twenty-four plates; large washable cloth background on portable frame; selling through ill-health; cheap; will separate.—Edward, 86, Chesterton Road, North Kensington, W.

**Shutters.**—Thornton-Pickard double blind shutter, 2 in., 16s. Wanted, good wide-angle, 3 in. focus.—Shaw, 5, Great Ancoats, Manchester.

Cadet's (Marion's) studio shutter and long tube, cost 42s., price 15s.—Walker, Scytholme, Nottingham. Shutter, Reynolds and Branson, 21 in. diameter, cost 27s., price 12s. 6d.—Walker, Scytholme, Nottingham.

**Stereoscopic Apparatus.**—Stereoscope for sale, quite new, 5s. 6d.—H. N., 7, Bracondale, Norwich.

**Sundries.**—Dozen quarter plate patent sheaths for hand-camera, cost 5s. 6d., sell 4s.; quarter-plate hand-camera lens, cost 21s., sell 15s. 6d.; bargain.—Clarance Jones, Alexandra Road, Blackburn.

What offers in stereoscopic apparatus, for "Doric Gallery," subscriber's edition, perfect?—"Stereo," J. Haigh, 77, Dale Street, Liverpool.

Rapid rectilinear lens by Franks, half-plate, 20s.; four-fold half plate oak tripod, 10s.; first-class ruby lamp, cost 7s. 6d., take 5s.; all new.—Dabbs, 141, Oldham Street, Manchester.

**AMATEUR PHOTOGRAPHER**, five years, containing Wall's "Dictionary," 12s. 6d.—Walker, Scytholme, Nottingham.

Three pairs first-class performing tumblers; exchange half-plate long-bellows camera, or Rock rifle.—P. Wilmington, East Street, Martock, Somerset.

**Tripod.**—Tripod stand for Lancaster's quarter-plate Instantograph, splendid condition. Offers?—S. Rimmington, Lesseps Road, Liverpool.

## WANTED.

**Cameras, etc.**—Wanted, Shew's quarter Eclipse, latest pattern.—No. 292, office of this paper, 1, Creed Lane, E.C.

**Cameras, Lenses, etc.**—Lancaster's special brass-bound Instantograph or International, or Instantograph with rectigraph lens, half-plate.—Haggar, 31, Devonshire Place, W. Write only.

**Hand-Cameras, etc.**—Wanted, well-made instrument for slides or rollholder, 53 adjustable focus, no lens.—Longden, Warrcliffe Chambers, Sheffield.

Facile or other cheap hand-camera wanted.—Pellatt, 81, Bishopsgate Street.

**Sets.**—Wanted, half-plate set, camera to have swing and reversing back; approval; deposit.—Wright, 16, Addey Street, Sheffield.

**Shutter.**—Wanted, instantaneous shutter, 3 in. hood; approval.—P., 46, Green Street, South Shields.

**Bargains in Lenses.**—For sale, 15 by 12 Optimus wide angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; Ross whole-plate actinic triplet, for large heads or groups, Waterhouse stops, take £4 15s.; Dallmeyer rapid landscape lens, quite new, for views, portraits, etc., fine definition, size whole-plate, fitted, rotating guaranteed, 60s., cost £5 15s. Watson whole-plate landscape lens rotating, good all round article, take 30s.; whole-plate Lancaster's Silver Ring rectigraph lens, quite new, grand definition, covers 9 by 7 well, works/10, take 60s.; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern take 60s. Portrait lens, cabinet size, rack focussing, finest order, take 17s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; quarter-plate portrait lens, by Rooker, of Newington, rack focus, best order, take 10s. 6d.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter plate Optimus rapid rectilinear by Perken, Son, and Raymont, Waterhouse stops, cover 5 by 4, focus 53 in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Photographic Appliances.**—Accessories and apparatus by all the following makers are always in stock; call and inspect any article you may wish to purchase, and compare with different makers' goods, and you will be able to possess the best and most suitable article for your purpose. Special large selections of Lancaster's goods, all Optimus cameras or lenses, Underwood's cameras, Fallowfield's Hand cameras, Talmer Hand cameras, Ideal Hand cameras, etc. All makers' plates, Ilford plates and papers, Puget plates, Thomas's plates, Fry's plates, Mawson's plates, silver papers, bags, cases, valises, 2-fold, 3-fold, and 4-fold stands, dishes, printing frames, etc., etc. Write for list to Manager, City Sale and Exchange, 54, Lime

Street, corner of Leadenhall Street, City (late Goy's Medium).

**Cameras! Cameras! Cameras! Lenses! Lenses! Lenses!** and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Cameras.**—Whole-plate Optimus Rayment camera, all latest movements, best leather bellows, reversing back, etc., fitted Lancaster's Silver Ring rectigraph lens, iris stops, three double slides, best Spanish mahogany fitted three-fold stand, £9 15s. lowest, cost £14, as new; Lancaster's whole-plate 1891 Instantograph, as new, all improvements, including camera, Instantograph lens, iris stops, instantaneous shutter, double slide, and folding stand, take £5 5s.; stereoscopic camera by Hare, size 7½ by 5, best leather bellows, double extension, swing-back, rising front, etc., fitted Chadwick's Landscape lenses, rotating stops, Thornton-Pickard time and instantaneous shutter and double slide, lot quite new; a real beauty, take £6 6s., cost £13 13s.; Dallmeyer stereoscopic camera, rack focussing swing back, three double and one single slides, fitted Ross' actinic doublet lens, rotating stops, 53 in. focus, £7 10s., a rare bargain; half-plate finest Spanish mahogany camera, back focussing, for wide-angle, finest leather bellows, rapid rectilinear lens, iris stops, by Mallett, three double slides and three-fold ash stand, as new, take £4 17s. 6d., worth £10 10s.; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s., worth £5; Lancaster's stereoscopic Instantograph, as new, two double slides, 63 by 34 instantograph lenses, instantaneous shutter and folding stand, take £3 17s. 6d.; quarter-plate Le Meritote set complete, camera, lens, slide and stand, 21s. lowest; also quarter-plate Instantograph set, as new, including camera, two slides, lens, shutter, folding stand, all latest improvements, 37s. 6d. lowest; above warranted in every detail. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Hand Cameras.**—Adams' Ideal hand-camera, fitted Wray's best rapid rectilinear lens, time and instantaneous shutter, carries 12 ½-plates, two finders, covered morocco leather, as new, take £6 6s.; Optimus Magazine hand-camera, carries 25 ½-plates; Optimus EuryScope lens, two finders, best condition, take £5 15s. Shew's 5 by 4 hand-camera, fitted Wray lens, Eclipse repeating shutter, covered black morocco, six Turnbull's patent film slides, in solid leather case, take £5 10s., quite new; Houghton's Automatic hand-camera, 12 quarter-plates in case, rapid rectilinear lens, rotating stops two finders, as new, £4 10s. lowest; London Stereoscopic Company's Despatch detective, covered black leather, fitted Stereoscopic Company's rapid rectilinear lens, Newman's shutter, two finders, three double slides, rack focussing, size quarter-plate, as new, take £6 6s., cost £10 10s. All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

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# The AMATEUR PHOTOGRAPHER

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Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

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FRIDAY, JUNE 3, 1892.

[PRICE TWOPENCE.

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

**OUR VIEWS.**—The Boston Camera Club Show—Photography at Home—Quarterly Examination—P.S.G.B. Exhibition—Hiring Apparatus.

**LEADER.**—Notes on Enlarging.

**LETTERS.**—City and Guilds Technological Examination (W. F. M.) Hints to Beginners (Forret)—A Warning (Facile)—The Blister Fiend (Browning, Tepidus)—Positives on Opal Glass (Large).

**REVIEWS.**—A B C Holiday Guide—Les Travaux du Soir de l'Amateur Photographe (Klary)—La Photographie devant la Loi (Bigeon).

**ARTICLES.**—Photographic Procedure (Wall)—Elementary Photography (Hodges)—A Universal Hand-camera (Bruno)—Printing on Home Salted and Sensitised Paper (Leeson).

**CATALOGUES.**—Butcher and Sons—J. Buncle—Wernhard—Crouch.

**LADIES' COMPETITION.**

**APPARATUS.**—Greeff's Agency—Scanlan's Film-Holder—Cathcart Plates—Some New Kodaks—Scottish Sensitised Paper—Fallowfield Hand-camera—Newman and Guardia's Changing Box.

**SOCIETIES' MEETINGS.**—Ashton—Birmingham—Barrow—Croydon—East London—Hackney—Holborn—Harlesden and Willesden—Liverpool A.P.A.—Liverpool Camera Club—P.S.G.B.—South London—Staff. Potteries—Sheffield—Tyneside.

**SOCIETIES' FIXTURES.**

**EDITORIAL DEPARTMENT.**—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

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**PUBLISHING DEPARTMENT.**—All letters containing Subscriptions, Orders, Remittances, SALE and EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZEL, WATSON, and VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE and EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

**"Amateur Photographer" Monthly Competition No. 37.**—**"PORTRAITURE AND FIGURE STUDY."** Latest day, June 27th—Prizes: Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, July 15th.)

THE Boston (U.S.A.) Camera Club held an exhibition from the 2nd to the 7th ult., and we have now received the official catalogue and list of prize-winners. With regard to the catalogue, we can only state that it is the most artistically and best illustrated of any that it has ever been our luck to see. It is illustrated by no less than six whole-plate pictures, including four photogravures and two collotypes. The printing and whole get-up is excellent. Some of our more influential clubs might well take a lesson from this.

The list of prize-winners is as follows:—

The Judges award medals to Mr. Francis Blake, of Auburndale, Mass.; Mr. William Sumner Briggs, of Boston, Mass.; Mr. Arthur R. Dresser, of Kent, England; Mr. Hamilton Emmons, of London; England; Mr. Benjamin Kimball, of Boston, Mass.; Mr. J. Prince Loud, of Boston, Mass.; Mr. George M. Morgan, of Boston, Mass.; Mr. Charles R. Pancoast, of Philadelphia, Pa.; Mr. Lyddell Sawyer, of Newcastle, England; Mr. Alfred Stieglitz, of New York, N.Y.; Mr. F. Dundas Todd, of Edinburgh, Scotland; Mr. Clement Williams, of Halifax, England.

The Judges award diplomas to Mr. John W. Alexander, of Yonkers, N.Y.; Mr. Henry W. Belknap, of Boston, Mass.; Mr. Charles I. Berg, of New York, N.Y.; Mr. James L. Breese, of New York, N.Y.; Mr. John G. Bullock, of Philadelphia, Pa.; Miss Emilie V. Clarkson, of New York, N.Y.; Mr. W. S. Clow, of Philadelphia, Pa.; Miss Emma L. Coleman, of Boston, Mass.; Mr. C. Court Cole, of Oxford, England; Mr. Chas. H. Currier, of Boston, Mass.; Mr. Wm. H. Dodge, of Lowell, Mass.; Mr. John E. Dumont, of Rochester, N.Y.; Mr. O. A. Eames, of Boston, Mass.; Mr. George H. Eaton, of Boston, Mass.; Miss Sarah J. Eddy, of Providence, R.I.; Mr. I. W. Evans, of Wolverhampton, England; Mr. William A. Fraser, of New York, N.Y.; Mr. Wilfred A. French, of Boston, Mass.; Mr. H. M. Grisdale, of New York, N.Y.; Mr. Martin J. Harding, of Shrewsbury, England; Mr. H. A. Latimer, of Boston, Mass.; Mr. John C. Lee, of Boston, Mass.; Mr. J. S. Mason, of Boston, Mass.; Mr. Clarence B. Moore, of Philadelphia, Pa.; Mr. George A. Nelson, of Lowell, Mass.; Mr. Robert S. Redfield, of Philadelphia, Pa.; Mr. Edward T. Sherman, of Yonkers, N.Y.; Miss Elizabeth Almy Slade, of New York, N.Y.; Mr. John L. Stettinius, of Cincinnati, Ohio; Mr. W. O. Witherell, of Boston, Mass.; Mrs. James Osborne Wright, of New York, N.Y.

We would again draw the attention of our readers to our "Photography at Home" competition, which closes on the 30th inst., and we hope to receive a large number of entries for the same. Forms giving full particulars will be sent, post free, on receipt of stamped addressed envelope. We referred to this competition in our issue of the 6th ult., and cannot do better than repeat our remarks.

This, as is well known, was instituted as "Home Portraiture," but the present title rather extends the field which may now be said to include portraiture and figure study, lawn tennis parties, etc., the main idea being that this should be essentially work done at or near home, in



opposition to our "Holidays with the Camera" competition, which should be work done whilst on tour or in the holidays.

It has been suggested to us that it would be extremely unfair to allow any competitor to send in work for this competition which has been produced in the studio of a professional photographer, or by his tools, therefore in the entry form this has been specially barred. Possibly there may be some doubt as to whether a genre or figure study not taken at home would be admissible, but we see no objection to this, and can point out that such a picture as "The Smithy," by Mr. F. Dundas Todd, which deservedly won the Silver Medal in our recent competition, would be eligible, though, strictly speaking, "The Smithy" may not be the competitor's home. The latest day for receiving prints for this competition will be June 30th, and all prints will be acknowledged in our columns, and a Special Number issued with illustrations, and competitors will oblige us by giving brief remarks as to the production of the pictures, etc., so as to make the Special Number more than a bare record of the details of plate used, etc.



WE are glad to be able to announce at last the result of our last "Quarterly Examination in Photography," which has unfortunately been delayed from unavoidable causes:—

1st.—Mr. T. Morley Brook.

2nd.—Mr. J. H. Brown.

3rd.—Mr. Bernard Lintott.

We shall be obliged if these gentlemen will let us know, per return, the articles they will choose as prizes, to the value of two guineas, one guinea, and half a guinea respectively.



THE P. S. G. B. have issued notices of their annual exhibition, to be held at the Gallery of the Royal Society of Painters in Water Colours, 5A, Pall Mall East, from September 26th to November 10th. The judges are Messrs. F. P. Cembrano, jun., W. E. Debenham, W. England, F. Hollyer, and J. Traill Taylor, with Captain Abney and Mr. A. Pringle as scientific experts. As usual, the proceedings will open with a conversazione on September 24th.



WE have received enquiries from no less than five correspondents as to the hiring of apparatus for the Whitsun holidays. In answer to these or any other of our readers who may be anxious to hire apparatus, the City Sale and Exchange, of 54, Lime Street, offer either hand or portable cameras of any size for hire by the day, week, or month. Any apparatus on the market will be obtained, and if after hiring the same the operator is so satisfied with the apparatus that he wishes to buy it, the hiring fee is deducted from the cost. Apparatus is also supplied on the easy hire system.



WE regret that in consequence of pressure on our space we are again compelled to hold over many matters of general interest.



**The Dangers of Photography Abroad.**—A Bulgarian retired officer was arrested on the Servo-Bulgarian frontier, while returning from a journey to Germany, for taking photographs of the country round Pirot from the window of the train. He was kept in prison two days.

**Mr. Clarence B. Moore**, who has before now contributed prints to our larger competitions, has been contributing a very good article on "Under the Skylight," to "the Home-Maker," which clearly explains with examples the art of posing and lighting. He has sent us a copy of the magazine, which is very well got up and illustrated.

## NOTES ON ENLARGING.—XII.

### VIGNETTING, PRINTING-IN CLOUDS, REDUCING AND INTENSIFYING PRINTS.

To vignette enlargements is not a difficult matter, and for portraits the result is sometimes more pleasing than without the same. For vignetting, it is only requisite to take a piece of cardboard the same size as the enlargement is to be, and cut in the cardboard an opening the shape of the desired vignette, *but small*; it should not be much larger than the lens aperture. The size of the vignette is determined by the distance of the vignetting paper from the sensitive surface, as the nearer this the smaller the vignette, and *vice versa*, the nearer the lens the larger the vignette. The edges of the vignetting opening in the card need not be serrated, as the vignette is softened by keeping the card constantly moving between the lens and sensitive surface. Many operators, however, prefer to use a vignetting shape with deeply serrated edges; and this is so adjusted as to give a pleasing soft outline on the focussing easel or screen; and this method is preferred because the moving vignette is stated to be the cause of blurring of the outlines from double vibration, a charge we have not found substantiated.

Enlargements of landscapes are always improved by the addition of clouds; and if these are non-existent in the negative a separate suitable cloud negative should be used. There are several methods of inserting clouds, which are given below.

One method is to make a small transparency by contact printing from the negative to be enlarged, and make a transparency of the cloud negative, masking out the landscape. The two may then be bound film to film, care being taken that the clouds are not reversed in lighting, and then making an enlarged negative from this. Another method is to make a silver print from the small negative, and carefully cut out the landscape, and allow the two pieces of the silver print to blacken completely in the sun. Then fasten the landscape print on to the cloud negative and the sky print on to the original negative, or else paint out the sky with some opaque colour. Having focussed and exposed the landscape negative, cap your lens with a piece of orange glass, and carefully adjust your cloud negative till it is in exactly the same position as the first negative, and the outline agrees with that of the view, which may be marked at the edges of the sensitive paper; then expose. Another method is to expose as usual for the landscape, develop, and clear; then without fixing, place again on the easel, and with the yellow cap on the lens, focus the clouds from the cloud negative and adjust till in correct position, and then cover up the landscape with a mask cut from ruby paper, and expose for the clouds.

The exposure for clouds should be very short, so as not to make them too dark and prominent; practically about one-fourth of the exposure required for the view will be correct for the clouds. Trees, church steeples, and other objects projecting into the sky may be practically disregarded, as these will print over the sky and give a more realistic effect. To prevent too sharp a line of demarcation, the mask, or a sheet of cardboard cut roughly to shape, may be gently moved up and down near the sensitive surface to shade the landscape into the sky.

### REDUCING AND INTENSIFYING BROMIDE PRINTS.

Sometimes by an error of judgment a bromide print or enlargement may be over-developed and too dark and heavy, in which case our only remedy is to resort to reduction; and most of the methods adopted for landscape work may here be applied. The most suitable, however, are Howard



Farmer's red prussiate of potash reducer, hypochlorite of soda, or Belitzski's reducer.

#### HOWARD FARMER'S REDUCER.

The print or enlargement is soaked in water till soft, and then some fresh saturated solution of hyposulphite of soda is added, and the dish well rocked, and then a few drops of a 10 per cent. solution of potassium ferricyanide or red prussiate of potash are added to the solution, and this again applied to the print. Reduction will visibly take place, the intensity of the action being controlled by the amount of solution of red prussiate used. The print should be removed before the exact stage of reduction is reached, as this action continues slightly during the process of washing.

#### HYPOCHLORITE OF SODA REDUCER

For this reducer two solutions are necessary, one the so-called Labarraque's solution, made as follows:—

|                   |    |    |    |           |
|-------------------|----|----|----|-----------|
| Chloride of lime  | .. | .. | .. | 50 parts. |
| Carbonate of soda | .. | .. | .. | 100 "     |
| Water             | .. | .. | .. | 250 "     |

Mix the chloride of lime with 150 parts of water and the carbonate of soda with the remainder; mix the two solutions and filter, and make the filtrate measure 250 parts by washing the filter with distilled water.

The second solution is a solution of chrome alum made by dissolving

|             |    |    |    |           |
|-------------|----|----|----|-----------|
| Chrome alum | .. | .. | .. | 10 parts. |
| In water    | .. | .. | .. | 250 "     |

To make the actual reducer, 15 parts of each solution are mixed together and diluted with 120 parts of water. This mixture is first thick and green, but gradually becomes clear yellow, in which condition it should be flooded over the print, previously moistened with water. The action of the reducer is to convert the image, or part of it, into chloride of silver, which must of necessity be dissolved by ordinary hypo. Care must be exercised that reduction is not carried too far.

#### BELITZSKI'S REDUCER.

This is the method which in our hands has given the best results, and from the improved formula lately recommended by Herr Belitzski it is still more useful, as it may be kept in the form of a stock solution. The formula is as follows:—

|                          |    |    |    |            |
|--------------------------|----|----|----|------------|
| Water                    | .. | .. | .. | 300 parts. |
| Potassium ferric-oxalate | .. | .. | .. | 15 "       |
| Sodium sulphite          | .. | .. | .. | 15 "       |

Dissolve, and add to the blood-red solution—

|             |    |    |    |          |
|-------------|----|----|----|----------|
| Oxalic acid | .. | .. | .. | 5 parts, |
|-------------|----|----|----|----------|

and shake till the solution turns green; pour off from any undissolved oxalic acid, and add—

|                     |    |    |    |           |
|---------------------|----|----|----|-----------|
| Hypsulphite of soda | .. | .. | .. | 75 parts. |
|---------------------|----|----|----|-----------|

When dissolved it is ready for use. To reduce the print, as soon as removed from the fixing bath rinse with water, and flood with the above solution, and remove as soon as reduced sufficiently.

The intensification of bromide prints is by no means a satisfactory process; it can rarely be effected without altering the colour of the deposit. There are one or two methods applicable.

#### INTENSIFYING WITH MERCURY AND REDEVELOPMENT.

This is perhaps the most satisfactory of all processes, and may be effected by bleaching the print in a solution of mercuric chloride, and then redeveloping with an old, used ferrous-oxalate developer.

#### INTENSIFYING WITH MONCKHOVEN'S SILVER CYANIDE.

The objection to the use of this formula is that one cannot make sure of obtaining a black tone in the intensified print, the colour of the image tending towards a brown.

#### INTENSIFYING WITH SILVER.

It may be quite possible to intensify bromide prints with an acid silver and iron, or acid silver and pyrogallol intensifier, but we so far have been unable to obtain results free from stains.

#### INTENSIFYING WITH URANIUM.

The application of Selle's process of uranium intensification, first suggested for collodion negatives in 1865, has been suggested as a toning process for bromide paper, but it is purely an intensification process. The following formula, which is a modification of the original formula, acts well:—

|                         |    |    |    |        |
|-------------------------|----|----|----|--------|
| Potassium ferridcyanide | .. | .. | .. | 1 part |
| Uranyl nitrate          | .. | .. | .. | 1 "    |
| Acetic acid             | .. | .. | .. | 20 "   |
| Distilled water         | .. | .. | .. | 200 "  |

This should be applied to the print when perfectly free from hypo, and the print should be soaked in water till limp, and then the above solution applied. When the intensification has proceeded far enough, wash thoroughly for half an hour in water acidulated with acetic acid.

#### CONVERSION OF THE IMAGE INTO PLATINUM.

The silver image of the bromide print may be converted into platinum by the following process, first suggested by Vidal in 1887. The well-washed print is immersed in the following bath—

|                      |    |    |    |            |
|----------------------|----|----|----|------------|
| Platinum perchloride | .. | .. | .. | 1 part     |
| Distilled water      | .. | .. | .. | 2000 parts |
| Hydrochloric acid    | .. | .. | .. | 25 "       |

till the desired tone is obtained. E. Vogel, junior, recommends the following:—

|                           |    |    |    |              |
|---------------------------|----|----|----|--------------|
| Chloroplatinite of potash | .. | .. | .. | 1 part.      |
| Distilled water           | .. | .. | .. | 1,000 parts. |
| Hydrochloric acid         | .. | .. | .. | 10 "         |

The print is placed in this for about twenty minutes, and the print is then thoroughly washed and fixed. To prove the substitution of platinum for silver, place the print in a solution of cupric chloride made as follows:—

#### No. 1.

|                           |    |    |    |           |
|---------------------------|----|----|----|-----------|
| Calcium chloride, crystal | .. | .. | .. | 10 parts. |
| Distilled water           | .. | .. | .. | 50 "      |

#### No. 2.

|                             |    |    |    |           |
|-----------------------------|----|----|----|-----------|
| Sulphate of copper, crystal | .. | .. | .. | 15 parts. |
| Distilled water             | .. | .. | .. | 100 "     |

When the salts are dissolved, mix the two solutions and pour on to a filter paper, and allow the filtrate to drain through, and wash the filter paper with 50 parts of distilled water. The print, or a portion of it, is soaked in the filtrate, when any silver remaining in the image will be converted into chloride, and may, after washing, be removed by the use of the ordinary fixing bath; or if the image appears pale and wanting in intensity, it may be redeposited in the shape of metallic silver by applying an old ferrous oxalate developer. If the print, after being treated with the cupric chloride solution, be exposed to actinic light, the image can be developed in shades varying in colour according to the duration of the second exposure.



## Letters to the Editor.

### CITY AND GUILDS TECHNOLOGICAL EXAMINATION.

SIR,—I see in this week's number of your paper some rather severe remarks on the way in which the practical part of the above examination was conducted. I was examined at the People's Palace, and went in for the ordinary grade. The only point in which I can agree with you is that more than one (in fact, five) developed their plates at a time; but there was very little talking, what there was being quite necessary, and not one helped another in any way. We were courteously attended to by Mr. Dollond and his assistant, and everything was done for our comfort. In fact, the arrangements were careful in the extreme down to details.

W. F. M.

[We have written to the candidate on whose information our note of last week was based, and will refer to this again.—EDITOR.]

\* \* \* \*

### HINTS TO BEGINNERS.

SIR,—The author of the article "Hints to Beginners" in last week's issue makes some rather misleading statements.

The paragraph with which I find most fault is that dealing with the hypo solution. The writer says "hypo has a tendency to sink should the solution not be quite saturated." Does he mean that crystals of the salt may form in such solutions? Or that the solution is strongest at the bottom of the vessel?

That crystallisation may take place in such solutions, two factors are essential, viz., a close approximation to the saturation point in the strength of the solution, and a reduction of temperature.

If the second construction be the correct one, I may point out that the phenomenon is common to solutions of all strengths, stored in vessels partly full. This cannot be called a "sinking" of the dissolved salt, but is brought about by a portion of the water volatilising, and subsequently condensing on and trickling down the sides of the containing vessel. This, of course, results in a solution the upper layers of which are a trifle weaker—almost inappreciably so—than the rest of the solution. This discrepancy is taken into account, in the case of such solutions as those used for volumetric analysis, but is of no moment in photographic manipulations, especially with solutions made by dissolving a large handful of a salt in an indefinite quantity of water.—Yours, etc.,

J. A. FORRETT.

\* \* \* \*

### A WARNING.

SIR,—For the benefit of those who scan the weekly Sale and Exchange columns in search of matter likely to meet their various requirements, I should be glad if you would assist me in the columns of your correspondence to expose a crafty and ingenious system of fraud to which I have had the misfortune to fall a victim, and doubtless it will be met with general appreciation by those likely to enter into similar transactions. Some months back I replied to an advertisement in a well-known medium (other than the AMATEUR PHOTOGRAPHER) worded to the effect that "A gentleman contemplating a month's tour would be desirous of borrowing a reliable hand-camera, preferably Facile, for that period, in lieu of 10 by 8 set, which would be left as deposit." Being possessed of a Facile, and desirous of doing some large work, I thought this would just suit me, and, regarding myself thoroughly safe in the matter of security, I communicated with the said "gentleman," and subsequent negotiations terminated in a settlement of the transaction, or rather agreement, apparatus being duly exchanged. At the expiration of the time specified, my Facile was returned, and after a *cursor* (unfortunately) inspection of same, I promptly dispatched 10 by 8 set to the owner. During the winter season I hibernated my camera, and thought no more of the affair until the recent run of fine weather induced me once again to turn my attention photographically, but all my results were failures. This being with me more the exception than the rule, I attributed it at first to my being out of practice after the spell of winter months, but all further attempts to equal my previous success being still met with a similar batch of failures, I began to smell a rat, and upon a minute inspection of the Facile, I discovered that the lens had been removed and substituted by a worthless thing that would not cover sixpence in definition, still less in value. So nearly did this lens resemble the original, that I failed when first it was returned to me to recognise the change. Comment upon the

artful and scheming device of this unscrupulous marauder would be superfluous, it being merely a piece of cunning strategy to obtain a lens on the cheap (exceedingly cheap), which, in this instance, proved successful. Unfortunately, not having kept a record of the transaction, I am unable to refer to data, name, address, etc., and my memory will not serve me sufficiently to assist in that direction, but I relate my bitter experience as a caution to others when entering into similar contracts to use your deposit system. It would also be advisable to those who see bargains to get them on approval. This will enable them to submit goods to the makers when known, and so get an opinion as to the genuineness of the article.

Personally, I have always found Fallowfields most courteous and obliging in these matters, and, as I have since found out, most willing to give a decision as to the genuineness of the Faciles wherever they may have been obtained. The lens is the chief thing likely to be tampered with, being the easiest to replace without detection in absence of test. I have often used mine for half-plates stopped down, hence the reason for such depredation is obvious.—I am, yours, etc.,

FACILE.

\* \* \* \*

### THE BLISTER FIEND

SIR,—Though I have been a subscriber from the first I have never seen mentioned in the AMATEUR PHOTOGRAPHER the remedy I give here. And I have been waiting for a week or two expecting to see it, but have not, so will now give it for the benefit of my fellow amateurs, when they will certainly find all their troubles in this quarter vanish. I have tried several makes of paper, some of them blistering most fearfully. But I never have a blister now, though using the same papers; in fact, I don't care whose paper it be, if the following instructions be followed failure is a thing of the past. My plan is to soak the prints in good methylated spirit for a quarter of an hour before washing out the free silver, and again after toning and before fixing. The spirit used before washing can be used over and over again—not the other.—Yours, etc.,

JOHN BROWNING.

SIR,—Like most other amateurs, when I began silver printing I had trouble with blisters. I tried several makes of paper, and found them all much alike. After this I fixed my prints in a tepid fixing bath, and transferred them to tepid water for washing, this latter being a trifle warmer than the fixing bath. When the first washing water was cold, I continued the washing with ordinary cold water, and I never have any trouble with blisters. When in a hurry, I allow a slow trickle of cold water to flow from the tap into the tepid water, but I have noted that if the warm water is cooled too fast blisters begin to form, on seeing which I add a little warm water and reduce the flow of cold water. I now find the various makes of paper much alike as regards blisters, and have no trouble from any of them.

I do not yet know whether this will affect the permanence of the prints.—Yours, etc.,

TEPIDUS.

\* \* \* \*

### POSITIVES ON OPAL GLASS.

SIR,—I am hoping before my dissolution to set the photographic Thames on fire, so, perhaps, this may prove the first spark. It may be there are many who would appreciate being able to produce a finished picture, i.e., a positive, in the camera on opal glass. I imagine pictures on this material would become very popular with the impatient public, who do not care to wait for the ordinary paper process, and who fail to see the artistic in the glass and ferrotype style. Besides, if practicable, they would be useful when friends come to see you (or your camera) or when they just come for a cup of tea and a photograph. If anyone, out of the above suggestion, should make a big fortune, a wee crumb thereof coming my way would meet the most heartfelt gratitude.—Yours, etc.,

H. S. LARGE.

P.S.—Perhaps the above could be made on the same principle as the water development plates—simply pour on water when, lo and behold the picture! I have seen this material in various pleasing tints, but to become popular the price would have to be well below fever heat.

Messrs. Shew and Co., of Newman Street, Oxford Street, have purchased the patent rights of Mr. Inkpen's Repeater hand-camera, and will shortly place the same, under the name "Repeatograph," on the market, in an improved form, at the reduced price of two guineas.



## Reviews.

*The A B C Holiday Guide.* Published at 6, Temple Chambers, Bouverie Street, E.C. Price 3d.

At this season of the year, one of the most prominent questions is, where to go for the holidays, and having decided this, where to get lodgings, and how to get there. This little work forms a very handy and useful guide in answering such questions. Over sixty of the leading seaside and holiday resorts are briefly described with the best means of getting there, the railway fares, the principal places of interest near, etc. There are included also numerous views, and a very useful lot of advertisements of lodging and boarding houses, and hotels. We can heartily recommend the book to all seeking information as to where to go.

*Les Travaux du Soir de l'Amateur Photographe.* By T. C. Hepworth. Translated by C. Klary. Published by Société d'Éditions Scientifiques, 4, Rue Antoine-Dubois, Paris. Price 4 fr.

Mr. Hepworth's book "Evening Work for Amateur Photographers," published by Hazell, Watson, and Viney, Ltd., has found considerable favour in England, and we now have a French translation of the same, by M. C. Klary, and very well it has been done too. We wish the French edition may have as much success abroad as the original work has had here.

*La Photographie devant la Loi et devant la Jurisprudence.* By Arm. Bigeon. Published by Société d'Éditions Scientifiques, 4, Rue Antoine-Dubois, Paris. Price 2 fr. 50.

A very well and clearly written hand-book to the legal status of photographers, and photographs, etc., which is rendered more useful by the consideration of the laws affecting photographs in most foreign countries.

## Photographic Procedure.

By E. J. WALL,

Author of the "Dictionary of Photography."

### SECTION V.

#### THE SENSITIVE MEDIUM AND ITS SUPPORT.

(Continued from page 397.)

As an alternative method of drying plates, the following may be adopted, and it is one which personally I prefer to that suggested by Mr. Burton. All that is required is an air-tight box, and some anhydrous calcium chloride. The plates to be dried should be merely placed in racks in the box, and a porcelain dish, as large as the box will hold, in the bottom. In the dish place the anhydrous chloride of calcium, put the dish in the box, the racks containing the plates, and shut the door or lid, and leave for three days, by which time the plates should be perfectly dry. In no case should the box be opened till a reasonable time has elapsed, or else peculiar markings will be caused due to unequal drying. When the calcium chloride has once been used, it should be heated in an oven till it fuses and melts, when it will lose all the water it has absorbed.

The disadvantage of drying by air alone is that the rate of drying is proportionate to the amount of moisture in the air, and that the unequal drying caused by a fall in temperature may give rise to marks which are absolutely irremovable and always show in the finished negative. We shall, however, consider this question again when we come to treat of failures.

*Testing Plates.*—To test a plate so as to be able to decide on all the good and bad qualities of plates is by no means an easy task. Certainly the man who is least competent to do this is the amateur who has used but a few, and those probably under conditions where error is extremely likely to creep in. It is no uncommon thing to see in the Queries and Answers columns of the AMATEUR

PHOTOGRAPHER a query which runs somewhat as follows, "Will any brother amateur kindly tell me whether Jones' plates are as good as Brown's?" Such a question is unfair to both Jones and Brown, and in many cases the answer is utterly valueless really. There is no bad plate in the market. It is true there may be one plate which is more suitable than another for a particular class of work. Thus some plates are more suitable for copying black and white, some for instantaneous work, some for interiors, etc. Then again comes in the question of rapidity or sensitiveness—is one plate quicker than another? Well, this is a question which Yankee-like we answer by asking, what light are you going to expose the plates in? Determine this, and we may tell you the most sensitive plate. Let us take as an instance two plates, one an ordinary plate of the highest sensitiveness, and a colour-sensitive or Isochromatic plate, which we know to be slower than the other, that we know requires one-fourth more exposure at mid-day on a sunny day in June on a given subject. Now, instead of exposing at mid-day let us expose at 3 p.m., when the sun is lower and the light yellower. What is the result, giving, as indicated above, viz., exposures as 1 to  $1\frac{1}{4}$ ? Why the ordinary plate will be slightly under-exposed, the Isochromatic fully exposed. Now let us carry it further still and expose at 6 p.m., the light being now strongly yellow; the result will be that the ordinary plate will be fearfully under-exposed and the Isochromatic fully exposed. The fact is that the sensitiveness of plates is to a great extent dependent upon the light to which they are exposed.

There are one or two points upon which, however, we may test our plates without much trouble, and they are briefly, whether the glass on which the emulsion is spread be free from flaws, whether it be of the same thickness throughout the dozen or batch, though this is really of little moment, except when using carriers. A more important question is whether it is cut to size correctly or not. It certainly is very annoying to find a plate that will not fit into the slide or carrier, though I must say that after some considerable experience commercial plates are very free from these defects.

The question as to whether the plates are evenly coated can be told very well by holding them up to the dark room light, or even examining a plate in daylight, when one may also see whether the surface presents a uniform appearance, either matt or glazed. Plates should be free from fog, of course, but it is not such a simple matter to decide, even this as it at first sight appears. It would be necessary to shield the plate as much as possible from the dark-room light, and to use in very exact proportions the developer recommended by the makers. Eder ("Photographie mit Bromsilber-Gelatine") says on this point, "a test plate should be developed, and special notice taken with regard to its freedom from fog and cleanness of the film. Whether the plates develop quickly or slowly is of little importance. The author calls a plate free from fog if it gives a fogless image in the ferrous-oxalate or pyro-soda developer without any addition of bromide. This does not mean to say that plates which only give clear images with addition of bromide must be bad. One ought never to adjudicate on plates when one has tested them with one developer only. Every plate should be developed with the developer most suited for it. Many plates give the best results with ferrous-oxalate; others, again, only with pyro."

(To be continued.)

Mr. Robert Graham has opened some new stores for the sale of photographic apparatus, plates, and chemicals, at 5, Booth Street, Piccadilly, Manchester.



## Elementary Photography.

BY JOHN A. HODGES.

The accompanying illustration is that referred to by Mr. John A. Hodges in his article of last week, p. 416, which unfortunately we could not have reproduced in time for inclusion in last week's issue. —EDITOR.

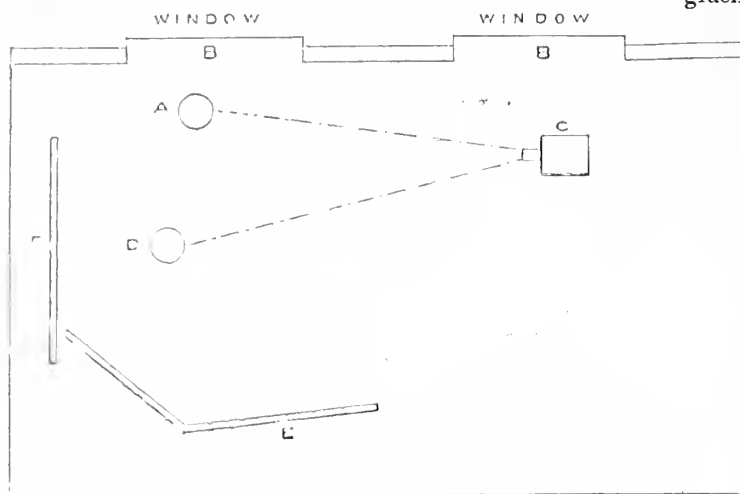


FIG. 1.

### CHAPTER XVIII.

#### ENLARGING BY DAYLIGHT.

Choice of Method—Daylight Preferable—General Principles—Apparatus Required—How to Enlarge in an Ordinary Room—The Lens—Getting Ready for Work—Procedure—How to Determine the Correct Exposure—Development—The best Negatives for Enlarging—The Use of a Reflector, etc.

THE amateur who contents himself with working a small-sized plate will probably be anxious to learn how to make enlargements from his small negatives, and as the process is one which presents little difficulty, I propose to devote a chapter to its consideration. Enlargements may be effected either by day or artificial light, but as the latter method involves the use of apparatus of a rather costly nature when half-plate or larger negatives are to be enlarged from, I intend to confine my attention to what is known as the "daylight method." The procedure is very simple, and consists in so placing the negative that the whole extent of its surface shall be evenly illuminated, as at A in fig. 1. An ordinary lens is suitably supported at B, by means of which an enlarged image of the negative is projected upon the screen C. The size of the enlargement will depend upon the distance at which the lens is placed from the negative to be enlarged; the nearer the former be placed to the latter, the greater will be the amplification.

Very little in the way of additional apparatus will be required, and as probably very few of my readers will care to go to the expense of purchasing a properly constructed enlarging apparatus, I will describe briefly how the necessary operations may be carried out in an ordinary room. An apartment at the top of the house should be chosen, and if the window faces north so much the better, as the sun's rays will not then interrupt work by casting shadows upon the negative and causing uneven lighting. The first thing to be done is to block out all light except that which passes through the negative, and the best way of effecting this is to make a frame the exact size of the window, which should then have a piece of calico tacked over it, which in turn should be pasted over with thick carpet paper. This when dry will be quite light-proof and as tight as a drum. The frame can be fitted up to the window or taken down at a

moment's notice, so that this arrangement may be used in any bedroom or apartment in the upper part of the house, without causing any serious disturbance of existing arrangements. An opening about 9 in. square should now be cut at CCCC (fig. 2), into which a light carrier D, with a rebate to take half-plate negatives, is to be fitted. This carrier may be easily secured to the brown-paper frame by glueing it to the opening with strips of stout paper.

Two small brass clips at EE will hold the negative in position. We have thus provided for condition number one, for when we have placed the frame and negative in position we shall have so arranged matters that the light is excluded from the room at the same time that the negative is evenly and brightly illuminated. A firm table is placed underneath and close up to the window. A suitable support must now be devised for the lens; at the same time provision must be made for the exclusion of light between it and the negative. For this purpose the camera in ordinary use may be utilised. The lens having been screwed on and the reversing back removed, the camera is placed on a box or other suitable support, in the position shown at A in fig. 3, close up against the negative. The only thing that remains to be done is to place a drawing-board, which has previously been covered with white paper, in a vertical position on the table at B. Such an arrangement, although

extremely simple and inexpensive, will enable the amateur worker to produce bromide enlargements of the highest excellence; indeed, some of the finest work of this class that I have ever seen has been produced under precisely similar conditions to those described. The most important point demanding attention is to see that all the separate parts of the arrangement are strictly parallel with each other; the camera must be close up to and square with the negative, and the drawing-board, upon which the enlarged image is received, must also be accurately parallel with the negative, as any disarrangement of the relative parts would cause a want of definition in the enlargement.

A rapid rectilinear is the best lens to employ, though if the reader does not possess one, any other kind may be

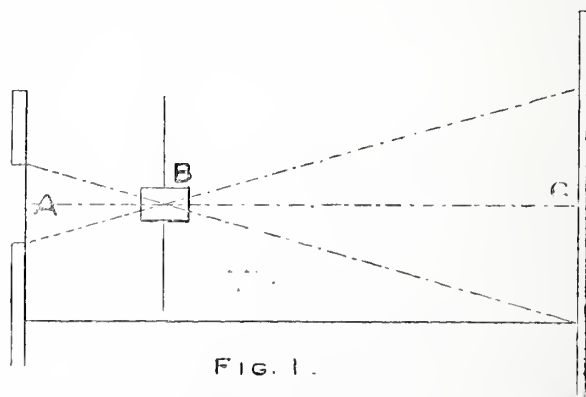


FIG. 1.

used—single, wide-angle, or portrait. He will generally be safe in using the lens with which the negative was taken, and if he has but one lens, and the advice previously given has been followed, that will be a rapid rectilinear.

The manner in which the apparatus is to be used is sufficiently obvious. The apparatus having been set up, the actual procedure is very simple. The negative to be enlarged is placed in the rebated groove, and the buttons turned to prevent it from falling out. The lens and camera being placed in position the enlarged image will then fall upon the drawing-board. Its size, as I have already pointed



out, will be determined by the distance at which the lens is placed from the negative. In the "British Journal Almanac" will be found a very useful table giving the distances at which the lens should be placed from the negative for lenses of different focal length, a reference to which will save much trouble in effecting the rough adjustment. The final focussing of the enlarged image is effected either by moving the pinion of the camera, or by shifting the drawing-board backwards and forwards until the image is quite sharp. If the lens be a good one there should be no necessity to stop it down to any considerable extent;  $f/16$  should be quite sufficient, and it must be recollected that stopping down will considerably increase the duration of the exposure. The image having been sharply focussed and

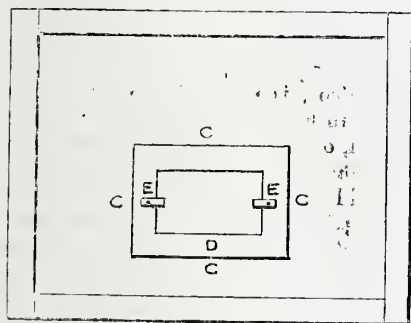


FIG. 2.

the lens capped, a piece of bromide paper is removed from its packet and secured to the drawing-board by means of drawing pins. The exposure may now be given, but its duration will depend upon a variety of circumstances—the density of the negative, the strength of the light, the aperture of the lens, the rapidity of the bromide paper, and a variety of other factors, all of which must be ascertained before any reliable advice can be given. The easiest and most practical way of finding out the correct exposure, although it is only a "rule of thumb" method, is to cut up one of the pieces of bromide paper into twelve strips, pin one of these on the centre of the drawing-board, covering all but three-quarters of it with a piece of card, now uncap the lens and give an exposure of say ten seconds; recap the lens, push the card so that it covers half the paper, and give another five seconds exposure, repeat the operation a third and a fourth time, so that the strip of paper will have received four different exposures. It should then be

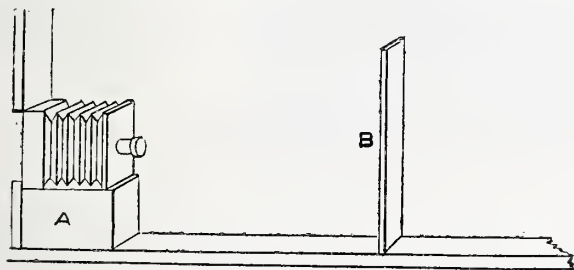


FIG. 3.

developed, when its behaviour will soon determine which exposure was most correct.

In regard to development little need be said, for the instructions given in the preceding chapter on bromide printing apply equally to the development of enlargements. It will, however, be well for the novice in bromide work to wet the bromide paper before applying the developer. I suggested that this preliminary wetting should be omitted, but as the beginner may experience some difficulty in getting the solution equally over the paper, the ordinary plan had better be followed. He should, however, implicitly follow the directions for the mixing of the solutions, etc., as the modified developer recommended will be found easier

to manage, and will give better results than the strong solutions usually employed.

A good and sharp negative will bear enlarging several diameters without any very perceptible loss of definition, but a negative which is wanting in sharpness will not give a good enlargement. Soft and rather thin negatives are the best for enlarging; dense ones do not enlarge well. Therefore if the negatives are intended for enlarging, some attention should be paid to these matters at the time of exposure and during development, so that a suitable negative may be obtained.

Sometimes it is not possible to secure a room with a window facing north, and the view from which is not obstructed. In such a case it will be necessary to use a reflector. This need not be a mirror, which would be costly, but may be made of thin boards neatly joined, and painted with a dull white paint. It should be fitted outside the window at an angle of 45 deg. with the negative. Working with a reflector obviates any difficulty with objects opposite the window, such as houses, trees, etc., only reflected light from the sky being utilised.

(To be continued.)

## A Universal Hand-Camera.

BY MAJOR BRUNO.

### CHAPTER II.

HAVING thus obtained a general idea of the lines on which our camera is designed, we will now get to work on the constructive details, bearing in mind that the following measurements apply to an instrument fitted with a lens of from 5 inch to 5½ inch focal length, when used for ordinary snap-shots.

This is the most usual length of focus for hand-camera lenses, and in the writer's opinion it is the best, as giving a

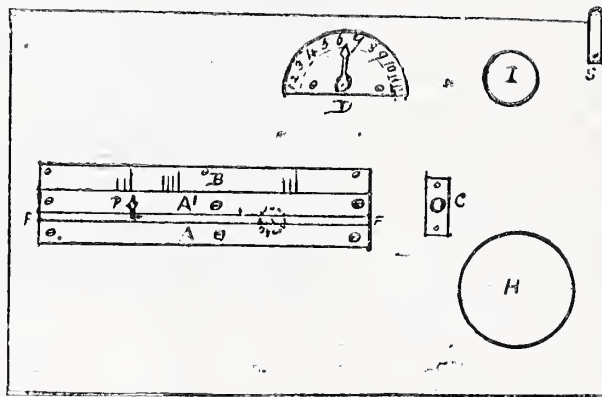


FIG. 5.

picture on a quarter plate free from distorted perspective, while at the same time it possesses good depth of focus, when stopped to, say,  $f/11$ , and a fair sized image when used at a reasonable distance from the subject. Shorter focus lenses may more advantageously be employed in street work, but the reader who intends to use one lens only for his instantaneous subjects is advised to invest in a rapid rectilinear of 5½ in. focus and to stop it down to  $f/11$  at least. Few lenses will give a really sharp image over the whole of a quarter plate (fit for enlarging, or lantern slides), unless stopped to  $f/16$ . In a good light, ample detail can be secured with this aperture and cautious development.

The interior mechanism of the camera requires to be



fitted to the outside casing as the work proceeds, consequently we start on the box itself, which should be of  $\frac{1}{4}$  in. stuff throughout, carefully squared and dressed, but not put together until all the parts are finished.

To lay the foundation stone, fig. 5 is a plan of the bottom of the case, drawn to a scale of 4 in. to the foot. First get out a piece of  $\frac{1}{4}$  in. stuff, free from knots, and carefully square it up to a size of  $9\frac{3}{4}$  in. long by 6 in. wide. For work of this kind one of the small iron planes will be found very handy. With a centre-bit, or fret-saw, cut out the aperture H, through which the winding handle of the roll-holder projects. It may be thought that a hole large enough to take the *shank* of the handle would be sufficient, unscrewing the handle whenever the roll-holder is inserted or withdrawn (as in some other cameras). But when it is remembered that we are providing a *swing-back*, the necessity of the larger aperture will be apparent, permitting one also to place the roll-holder in position intact, folding and unfolding its winding handle through H. Cut out the smaller hole I, which allows the rise and fall of the indicator to be watched. C is the socket for the tripod screw when the camera is used for horizontal pictures. It consists of a brass plate let in flush with the wood, and is secured by two countersunk screws. The hole in the centre is of course bored and tapped to take the tripod screw. Beware of a simple "bush" to take the tripod-screw, which sooner or later will part company with its surroundings. With perhaps the exception of the set-screws and their nuts, all the brass fittings required for the camera can be filed up out of sheet brass by any amateur fairly skilled in metal work. But it may be here mentioned that they can be obtained from Mr. H. Park, 5, Station Buildings, Acton Street, Kingsland Road, London, N.E., whom the writer has always found prompt in sending any fitting required, well finished and reasonable in price, on receipt of rough sketch.

D is a semi-circular indicator obtained from an old printing frame, and is screwed into position with round-head screws. It will be found convenient for recording exposures.

A, A<sup>1</sup> are strips of sheet brass,  $5\frac{1}{2}$  in. long by  $\frac{3}{8}$  in. wide, let into the wood so as to be flush with its surface, and fixed so as to leave a slot between them  $\frac{1}{8}$  in. wide (F). This slot must extend through the wood, and can either be cut out with the fret-saw, or carefully removed with a fine chisel. In this slot the set-screw which clamps the camera "front" at the required focus (as shown in fig. 2, p. 418), travels. (See dotted lines in fig. 5.)

The scale for setting the various lenses at their correct foci may be engraved on the strip A<sup>1</sup>, but the writer preferred to let in an ivory strip, B, on which the scale is first scratched with a needle point and then filled in with a ruling pen and indian ink. The slight extra work involved is amply compensated for by the distinctness of the scale, which is rapidly obscured on brass, after exposure to the weather. A brass pointer, P, cut out of thin brass is fixed by two screws to the "front" of the camera (inside the case), and passes through the slot F. It is then turned over at right angles so as to bring its point to the scale marked on B. It travels with the "front," of course, as the latter is moved in and out by the clamping screw, and care should be taken that it is so fixed that when the clamping screw is at the short focus end of slot F, the pointer marks the scale of the shortest focus lens used.

By this means the variations in focus can be adjusted with speed and accuracy: The scale B should not be graduated until the front is fitted and the lenses ready to test. The sharpest focus will be obtained by pinning up a sheet of printed matter, and varying the distance of the camera from it.

S is a small brass spring with a catch or snap filed out at the end shown projecting. It is used to clamp the door shown in fig. 3, page 418, when closed. The door being hung on a spring hinge flies open as soon as catch S is pressed down. The bottom of the box is now complete externally. The top should be made of exactly similar dimensions, and has but one aperture for viewing the finder. This should not be cut until the finder is fitted.

For the two sides, two pieces  $9\frac{3}{4}$  in. by  $5\frac{3}{4}$  in. (also of  $\frac{1}{4}$  in. stuff) are required.

The "left" side, as shown in fig. 3, is cut in two, and hinged, with preferably one hinge extending the whole length of the door. If properly let in, this hinge is almost invisible from the outside. A flat steel spring about  $1\frac{1}{2}$  in. long by  $\frac{1}{2}$  in. wide, should be screwed to the inside of the fixed half (equi-distant from the top and bottom), so as to project under the door when closed. The door depresses this spring as it closes; consequently, when the catch S, fig. 5, which secures the door, is released, the latter flies back to the position shown in fig. 3. The reverse or "right" side of the box is left plain, or can have a socket similar to C, fig. 5, let in, for use on the tripod when vertical pictures are desired. (Note: It will be found very useful to have *all* the screws of the same gauge and thread, as in the event of the tripod screw going astray, another can be improvised from one of those used to clamp the rising front.)

The end of the box with its sliding arrangement for focussing, and the front with the finder, shutter, and extension movements, will be dealt with in the next chapter. Meantime, those who have got so far with the material for the outer case may wish to know how the box is *ultimately* to be put together. Perhaps the most workmanlike plan would be to dovetail, or "half-joint" it, but as the measurements given are taken from the writer's camera, which is put together in a simpler but equally efficient manner, the reader is advised to adopt the same method.

The sides are first glued up to the top and bottom, and afterwards firmly secured with fine  $\frac{3}{4}$  in. fine brass screws, counter-sunk and placed at intervals of about  $1\frac{1}{2}$  inch. When the front and back of the case are fitted, a strong and rigid box is formed, which will stand any reasonable knocking about, and most climates. This information is given here, not because any portion of the box is to be put together at this stage, but in order that the necessary screw-holes may be drilled before the sides are finished up.

(To be continued.)

## Catalogues.

W. BUTCHER AND SONS, Blackhoath.

A well compiled and illustrated price list of photographic and lantern appliances, at reasonable rates and special discount. Many useful chemical appliances are included, which are specially applicable to photography.

JAMES BUNCLE, Optician, 7, Hope Street, Edinburgh.

A convenient little price list of all photographic requisites and of the leading manufacturers' goods. A convenient dark-room is also provided for the use of customers and tourists.

MOMENT UND HAND-CAMERA PREIS-COURANT. Otto Wernhard, 24 and 25, Sonnenstrasse, Munchen.

Certainly the most complete price list of foreign hand-cameras we have yet seen, varying in price from 15s. to £15 and over. A brief note is included on developing and printing.

HENRY CROUCH, 141, Oxford Street, W., and 66, Barbican, E.C. This well-known optician has issued a new and supplementary catalogue dealing especially with his well-known lenses, the majority of which are constructed of Jena glass, and the new Dresser hand-camera, and the "Crouch" magazine, both of which we shall take an early opportunity of examining, as well as the new special hand-camera lens.



## Ladies' Competition.

THE Judges who kindly assisted us in awarding the prizes for the above competition were Mr. Valentine Blanchard and Mr. John A. Hodges; and we regret to say that their remarks as to the general quality of work sent in was by no means flattering. The awards were as follows:

|                  |     |                         |
|------------------|-----|-------------------------|
| Gold Medal ...   | ... | MRS. S. FRANCIS CLARKE. |
| Silver Medal ... | ... | MISS E. ANNESLEY.       |
| Bronze Medal ... | ... | MISS M. WATSON.         |
| Certificate ...  | ... | MISS C. FAWCETT.        |

MRS. CLARKE'S work is a set of very fine figure studies, far superior to any of the other work.

It would be impossible for us to criticise in detail all the prints, but we briefly indicate the faults prevailing in each set, and the best picture.

**MISS E. ANNESLEY:** The best pictures in this set are No. 7 and No. 1. The prevailing fault, a little too much contrast in the prints and inattention to the foregrounds.

**MISS M. WATSON:** Eight very good platinotype prints of Swiss and Italian scenes, the distant and snowclad mountains in the Swiss scenes being particularly fine. We reproduce one Swiss view which is very characteristic. The general fault is want of brilliancy in the prints.

**MISS C. FAWCETT** sends us seven silver prints, most of which are printed far too deep, and we reproduce one of a well-known view of Durham Cathedral.

**MISS BROOKSBANK:** Six silver prints of unequal merit, the best undoubtedly being No. 4. All the prints would have been improved by a little more careful trimming.

**MISS CANDY:** Eight silver prints, all of them far too flat and generally over-toned. The best is certainly No. 8.

**MISS DOWAN:** Seven prints, the whole of the platinotypes being far too flat. No. 6 is the best, but would have been improved had the foreground been in sharp focus.

**MISS BRADSHAW:** Six silver prints, all of them flat and wanting in sunshine, the best being Nos. 1 and 6.

**MRS. BIRD:** Most of the subjects are spoilt by halation, due to over-exposure, and the prints are flat and weak; one or two of them show decided signs of light having gained access to the plate through the hinges of the dark-slide.

**MISS MANLOVE:** Quarter-plate studies, all of which are far too formal in composition.

**MISS ACTON:** Seven silver prints of fair average merit, though most of them would be a little improved by more brilliancy. The best are undoubtedly Nos. 5 and 3.

**MISS WILLIAMSON:** Eight silver prints, the best of which is No. 5. One or two of the prints show carelessness either in printing or toning, and are marked with dark lines.

**MISS PEARSON:** Eight silver prints, the best of which is un-

doubtedly No. 8. The prints would have been improved had they been on white paper, and not printed quite so deeply.

**MISS KING:** Eight half-plate silver prints, all under-exposed and printed too deeply.

**MISS HANNS** sends us eight silver prints, every one of which is spoilt in the printing. No. 7 could be made a picture of by careful printing.

**MISS K. BARTROP:** Eight little quarter-plate studies, most of them utterly spoilt in the printing, and the mounting is also very bad. The whites of the prints show a yellow tinge.

**MISS M. A. HENDERSON:** Seven prints, most of them flat and poor, and would be improved by a little more attention to the foregrounds.

**MRS. BLURTON:** This competitor sends eight bromide prints of such unequal merit that one almost hesitates as to whether it was all done by one person. The best is undoubtedly No. 5.

**MISS PAINT** sends seven prints showing careful technical work but sadly wanting in artistic qualities. No. 2 suffers from the finest specimen of flare spot it has been our lot to see for a long time.

**MRS. GADDUM:** This competitor sends us six silver prints, all of them spoilt by over-printing, over-toning, and the pink paper.

**THE MISSES BULWER:** Seven silver prints, all of which are spoilt by the violent contrasts. The competitors add as a footnote to their entry form that floods of sunshine on a lime-stained soil caused violent contrasts; as they are aware of this it is a great pity they did not use some other developer rather than hydroquinone, which always has a tendency to increase the contrast.

**MRS. BAIN** sends us eight prints, the best of which are without doubt the two interiors. These are fully equal to any work in the competition, and had the others been equal to them they would have come out pretty high.



No. 1.

A GREEK 'STUDY.'  
GOLD MEDAL.

[Mrs. S. F. Clarke.]

**MISS NIBLETT:** Six silver prints. The only two calling for any particular notice are those illustrating the old tale of "Humpty Dumpty."

**MISS DIXON:** Six half-plate silver prints, showing careful work.

**MRS. BROCKHOLES** sends six very fine hoar-frost studies. Highly commended.

**MRS. PERKINS** sends us eight bromide prints, the best of which are undoubtedly Nos. 8 and 4.

**MISS HAINES:** Seven silver prints, which could be improved by a little more toning. The best is undoubtedly No. 4.

**THE HON. MISS E. DILLON:** Seven prints of very unequal merit, No. 3 being the best.

**MISS PRITCHARD:** This competitor's work is fearfully handicapped by want of knowledge as to the first principles of printing and toning.

**THE HON. MRS. BENYON:** Eight silver prints, the only striking one among them being No. 8, and certainly recalls a study of Constable or Old Crome. All of them are characterised by carelessness in trimming and mounting.



## Printing on Home Salted and Sensitised Paper.\*

BY A. J. LEESON.

ONE of the advantages of salting and sensitising one's own paper is, that paper suitable for all subjects is easily prepared, whether the detail is wanted to be microscopically sharp, or whether it is required that the detail shall be softened down in the charming manner obtainable by means of the rough paper. There will, of course, always be two opinions about the rendering of detail, but a great deal depends upon the class of subject which is represented, and the fancy of the printer.

### THE PAPER TO BE USED.

The paper I generally use is Whatman's hand-made water-colour



No. 2.]

"A CORNER OF THE MARKET."

SILVER MEDAL.

[Miss E. Annecley.

paper, but so long as it is pure, of an even surface, will stand plenty of washing, and is of a good colour, it is immaterial whose make is used. Lyonel Clark recommends Reeves and Son's Arnold's unbleached. But it is not necessary to use paper at all, for silk, satin, wood, etc., may be used instead. Whatmans have a number of papers with different surfaces, from the very smooth to the very rough, so that all one has to do is to suit the paper to the negative.

The colours obtainable are a great feature of this process; browns, reddish browns, sepia, purple, black, etc., are very easily acquired, and there is no difficulty with the whites, except perhaps at the edges; and for that reason I sensitise a little larger sized piece of paper than I require, so that the outside edges may be trimmed off. An imperial sheet of Whatman's paper will cut up into six pieces 10 by 8, and three pieces 10 by 6. These sizes allow for masking off a margin when printing from whole plates or under. I ordered from a local mount maker, a number of masks cut to required sizes, so that I can at any time adjust the mask to the size of the picture required.

\* Extracts from a paper given before the Birmingham Photographic Society.

### SALTING THE PAPER.

The salting solution I generally use is made up as follows:—

|                                         |                     |
|-----------------------------------------|---------------------|
| Chloride of ammonium (not sal ammoniac) | 7 parts, or 2 drms. |
| Gelatine                                | 12 " or 3½ "        |
| Water (warm)                            | 1,000 " or 36 oz.   |

The chloride of ammonium is put into the solution when nearly cold. The prints are placed in this, and brushed over with a tuft of cotton wool, and allowed to lie immersed till the paper is fully expanded. They are then taken out separately and hung up to dry in a warm room. If preferred, the prints may be floated for about three minutes on the bath singly. Always use the bath pretty warm, or the gelatine will set in patches. Thin negatives require more ammonium chloride than dense ones. Rapidity of printing is obtained by the use of more salt with the gelatine. It also makes a more vigorous print.

The paper now contains ammonium-chloride, but as this is insensitive to the rays of light, silver in the form of a nitrate is applied. This combines with the ammonium-chloride, the latter giving up its chlorine to the silver, forming chloride of silver, and the ammonia takes up the nitrogen, forming a soluble salt, ammonia nitrate. This silver chloride darkens on being exposed to the light.

The sensitising bath is made up as follows:—

|                   |                            |
|-------------------|----------------------------|
| Nitrate of silver | 2 parts, or 3 drms. 12 gr. |
| Distilled water   | 10 " or 2 oz.              |

(It is not absolutely necessary that the water should be distilled, but the purer the water the better.) The nitrate is dissolved in the water and is then converted into "ammonio-nitrate of silver" by adding ammonia drop by drop, till the precipitate first formed is re-dissolved. It is then divided into two equal parts, to one of which add nitric acid till the litmus test shows that it is slightly acid. The two halves are then mixed and the bulk made up with water to 2½ parts or 4 oz.

This bath need not be protected in the slightest from light. In fact, silver baths are often improved by being "sunned."

This solution is now brushed over the paper on the right side. I always place the paper on a large sheet of plate glass inclined a little by being placed in a large porcelain dish, the bottom of the glass resting on the bottom of the dish and against one side, and the opposite side of the dish supporting the glass plate. On this I place a sheet of blotting paper and then the paper to be sensitised. The blotting paper absorbs any solution which may come over the sides of the paper, and should any quantity flow off the paper the dish prevents it reaching the table.

The solution is then brushed over the paper in broad sweeps by means of a good-sized camel-hair brush (avoid brushes bound with wire), commencing at the top and working from left to right till the bottom is reached. The paper is then turned at right angles to its previous position, and the brushing repeated so that it will cross the lines of the other coating. It can then be hung on a peg to dry. This process is then repeated, as the nitrate of silver must be in excess. This paper when prepared will not keep like the ordinary sensitised paper

of commerce, but should be sensitised, toned, and fixed in the day or within forty-eight hours at longest. Should it be wanted to be kept a time before being toned, a different formula will be required. Mr. Clark recommends the following:—

|                            |        |
|----------------------------|--------|
| Nitrate of silver...       | 60 gr. |
| Citric acid (crystals) ... | 25 "   |
| Water ...                  | 1 oz.  |

as, in albumenised paper, the citrate of silver keeps so much better than the nitrate, as it is the free nitrate which discolours the paper.

One can tone with almost any toning bath, the prints toning much quicker than the ordinary silver paper. In fact, for the following bath, which I always use, the time varies between 45 seconds for a warm brown to 3 minutes for a purple black.

### TONING BATH.

|                      |        |
|----------------------|--------|
| Borax ...            | 30 gr. |
| Chloride of gold ... | ½ "    |
| Water (warm) ...     | 6 oz.  |

The bath can be used at once and while warm. No appreciable difference will be noticed in the colour until put into the fixing solu-



tion, when the colour instantly begins to change to the tint required.

#### FIXING.

After washing, the print is placed in a fairly strong hypo bath



No. 3.]

"A SWISS VILLAGE."

[Miss Watson.

BRONZE MEDAL.

for ten minutes, and it is then as well to place it in a second hypo bath, so as to be quite sure all the free silver is removed. The prints are then washed thoroughly and dried by being hung up by one corner, previous to which I place them between blotting paper to absorb all the water from the surface of the print.

These prints lend themselves to spotting very easily, as the colour is not repelled, as is the case with albumenised paper, and the colours are easily obtained.

In conclusion I would draw your attention to a few notes it is well to bear in mind.

It is best, if possible, to salt and sensitise the paper in double length strips.

One advantage of Whatman's paper is that the name is confined to one quarter sheet.

Don't make enough salting solution to last more than a month, or it will rot.

Keep the bath warm while salting.

If rapidity or vigour is required, use more salt.

Once sensitising is often not sufficient; repeat the process, in order to be on the safe side.

Don't dry it too quickly.

Sensitise, tone, and fix, if possible, in one day, as by so doing cleaner prints are obtained.

The pluckier the negative the richer the tone.

Wash thoroughly.

Stains of silver may be removed by salt, hypo, or cyanide of potassium.

Be sure the paper is perfectly dry before placing it in the printing frame, or it will spoil the negative.

Print deeper than is usual for albumenised paper.

Wash in a change or two of water before toning.

Wash well after toning and before fixing.

Wash very thoroughly after fixing.

## Apparatus.

### MESSRS. R. W. GREEFF AND CO.

This firm are now sole wholesale agents for Dr. Andresen's Rodinal, eikonogen, and paramidophenol, and Dr. Byk's permanent hydroquinone and pyrogallie acid, besides all other photographic chemicals manufactured by several of the leading German firms.

With regard to Rodinal, it may be of interest to state that we have lately given this a very extended trial, and find that for snap-shot work it is certainly superior to eikonogen. We have commenced development with a strength of 1 in 30, and as soon as all detail was visible, increased the strength to 1 in 15. Very good density and good printing power is easily obtained.

### SCANLAN'S HOLDER FOR FILMS.

Mr. J. Désiré England, of 21 to 24, Charles Street, Notting Hill, W., has introduced a larger size of this extremely useful adjunct to film work. It is specially intended for enlarging or reducing from quarter, half, or whole plate, or larger negatives, and is so constructed that it will fit into any ordinary double carrier of dark slide.

In this form the film is inserted gelatine or emulsion side in contact with the fixed glass in the Holder, the cover glass is then inserted in its place at the back of the film, thus holding the latter tight in its position. The opening at bottom of frame facilitates removal of the film negative with the thumb of the left hand. When not in use, a card or spare film keeps the cover glass in position. This Holder can also be used without the cover glass for transmitting daylight, or with artificial light, where the heat is not too great—a thinner form for the purpose is made, the film in this case is inserted with the emulsion side outward or exposed.

Prices: quarter plate, 1s. 6d.; 5 by 4, 2s.; half plate, 2s. 6d.

### THE CATHCART PLATES.

F. W. Verel and Co., Cathcart, near Glasgow, have sent us a sample of the above plates, and we find them of good sensitiveness and very clean working. They have a good thick coating of film, and have given us very fine negatives.

### SOME NEW KODAKS.

The Eastman Photographic Materials Company, of 115, Oxford Street, W., are introducing some new and exceedingly useful forms of the Kodak, which are likely to find considerable favour with our readers.



No. 4.]

"DURHAM CATHEDRAL."

Miss C. Fawcett.

CERTIFICATE.

The particular novelties are, first, in a universally popular direction, viz., price, and secondly, in that the roll of exposed film may be removed and a fresh spool placed in the camera in daylight,



so that when a spool has been exhausted it will no longer be necessary to have recourse to the dark-room or changing bag

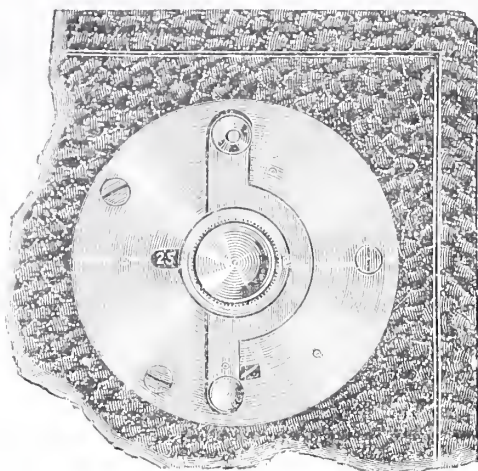


FIG. 1.

Each camera is provided with a specially selected and tested lens with three stops, which, from specimens of work shown us, is of first-class quality; and a special locking and register device is used, which prevents over-winding, and records the number of exposures made (fig. 1). The necessary motions are still confined to the famous triad—

- (1) Press the button.
- (2) Push register lever.
- (3) Turn key.

The front of the camera is seen in fig. 2, and the stops are of the usual revolving pattern. The shutter is set by pulling the cord till two clicks are heard; for time exposures, till one click only. In the larger sizes two identical finders are provided.

To reload is a simple matter. The roll-holder is removed from the back of the camera, unscrewed, and the spool boxes lifted out. Each film is provided with a length of black paper, which

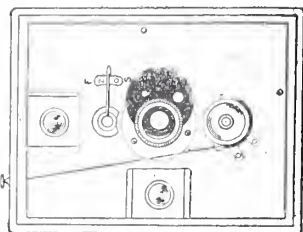


FIG. 2.

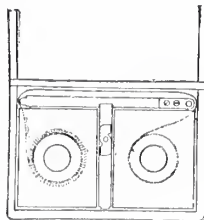


FIG. 3.

should be cut between the two boxes at a point about one inch from the empty box. Take a fresh spool box, place alongside the empty one, the slotted ends away from the operator. The end of the black paper protruding from the fresh spool box should be gently pulled over to meet the paper on the empty spool and fastened by moistening the gummed edge; this being allowed to dry for about five minutes. The spools are now placed in the roll-holder, the full spool at the left, and the film passing over the exposing board to the empty box, as shown in fig. 4. The index is now pushed back and the index set at 21, and on winding four times, No. 1 film is ready for exposure.



FIG. 4.

PRICES:—"Daylight" style, covered with black leather, and fitted for spools to reload in daylight; size of negative in inches, (A)  $2\frac{3}{4}$  by  $3\frac{1}{2}$ , £1 16s.; (B)  $3\frac{1}{2}$  by 4, £3 5s.; (C) 4 by 5, £5 5s. "Ordinary" style, finished in natural wood, (A)  $2\frac{3}{4}$  by  $3\frac{1}{2}$ , £1 6s.; (B)  $3\frac{1}{2}$  by 4, £2 2s.; (C) 4 by 5, £3 5s.

All the above Kodaks are loaded with spools for twenty-four exposures.

The A Daylight has single lens, fixed stop, and requires no focus-

sing. The B Daylight has double lens, revolving stops, and view finder. The C Daylight has double lens, revolving stops, adjustable speed to shutter, two view finders, and focussing lever to index. The A Ordinary has single lens, fixed stop, and requires no focussing. The B Ordinary has single lens, revolving stops, and view finder. The C Ordinary has single lens, revolving stops, adjustable speed to shutter, two view finders, and focussing lever and index.

All the above Kodaks are supplied with manuals of instructions gratis, and are fitted with our patented automatic locking and registering device, which effectually prevents overwinding of the film, and records the number of exposures made.

Spools for twenty-four exposures, Daylight, (A)  $2\frac{3}{4}$  by  $3\frac{1}{2}$ , 3s.; (B)  $3\frac{1}{2}$  by 4, 4s. 6d.; (C) 4 by 5, 7s. Spools for twenty-exposures, Ordinary, (A)  $2\frac{3}{4}$  by  $3\frac{1}{2}$ , 2s. 9d.; (B)  $3\frac{1}{2}$  by 4, 4s. 3d.; (C) 4 by 5, 6s. 3d.

A plate-glass attachment can be fitted to the C cameras, at 21s. for Daylight and 17s. for Ordinary extra.

### THE "FALLOWFIELD" HAND-CAMERA.

Jonathan Fallowfield, of 146, Charing Cross Road, W., has introduced the above new hand-camera, which we venture to think is a great improvement on both the "Miall" and "Facile," the other well-known cameras of the same maker. It has a magazine holding twelve or more plates, and at the same time

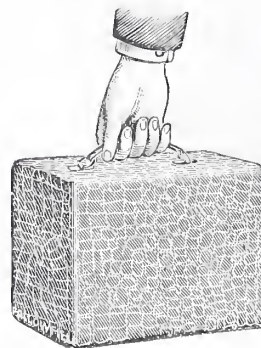


FIG. 1.

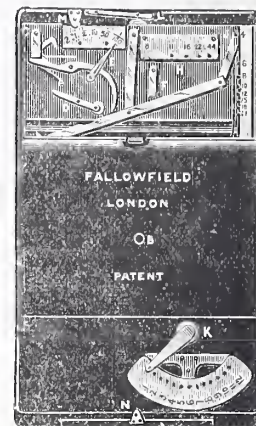


FIG. 2.

has a ground glass which may be used for focussing on, and is provided with store boxes, which enable one to carry more than a dozen plates and remove the exposed plates and put a fresh supply in the camera ready for use in daylight.

As will be seen from fig. 1, it takes the form of an ordinary dressing case covered with crocodile morocco leather, and measures  $5\frac{3}{4}$  by  $9\frac{1}{4}$  by  $11\frac{1}{2}$  in., and it weighs 5 lb. The lens is the well-known "Facile" rapid rectilinear of  $5\frac{1}{2}$  in. focus, fitted with iris diaphragm, which is actuated by the lever H (fig. 2). L is the lever which uncaps simultaneously the lens and finder, the lens cover flying up and forming a sky shade.

The shutter works between the lenses, and by the speed indicator E can instantly be set to work at  $\frac{1}{100}$ ,  $\frac{1}{50}$ ,  $\frac{1}{25}$ ,  $\frac{1}{15}$ ,  $\frac{1}{10}$ ,  $\frac{1}{5}$ , 1, and 2 seconds, C being the setter and D the release, which also automatically works the interior safety flap shutter behind the lens, so that plate cannot be exposed while setting the shutter C. If shutter C is caught by the small arm, a prolonged exposure can be given by release D, which can be held back indefinitely by catch F. Focussing can be done by the arm J on the scale shown, from 4 ft. up to FF (fixed focus) for distant views; or it can be done visually (as in ordinary cameras) by means of the full-size screen, which forms back of plate box, when the indicator K is pointed to O and the back of the camera opened at N. N.B.—Of course all plates must be turned into top chamber during this operation, and then any plate brought into position must fall into exact position occupied by focussing screen. Finders are of the well-known "Facile" pattern, large size and sunk deep down, close above lens, and giving identical view either landscape or vertical way at the moment of exposure. By an ingenious arrangement one opening answers for both, the vertical finder being pushed into position by finger when required. Plate changing is most reliable and simple, and is effected by pointing the arm K to whatever number of plate is wanted for exposure. The twelve can be exposed in rotation or any order preferred. By reversing the camera, all the plates (or any of them) can be returned to the top chamber, and taken out in store box, when a box of twelve more can be inserted; all being done without any dark-room and in bright sunlight if necessary.



The camera is provided with sockets for use on a stand, and the "Fallowfield" is thus at once a hand camera or may be used for ordinary work on a stand. It is beautifully made and should find many friends, especially amongst those who like to use an instrument sometimes as a hand-camera and sometimes to replace the ordinary form.

#### THE SCOTTISH SENSITISED PAPER.

A sample of the above, which emanates from 57, Hope Street, Glasgow, has given us every satisfaction. It is richly sensitised and prints vigorously and quickly, and with any of the ordinary toning formulæ, has given us a very wide range of tones.

Now that the question of blisters is receiving so much attention in our columns, our endeavours were specially directed to obtaining the same, but without success. The paper may be obtained in various colours, and either in sheets or cut to any desired size.

#### MESSRS. NEWMAN AND GUARDIA'S CHANGING BOX AND CARRIERS.

Messrs. Newman and Guardia, of 71, Farringdon Road, London, E.C., have introduced an improved changing box for plates and films, which is simple, effective, and not likely to get



FIG. 1.

out of order. A special form of bag is provided, with which the changing of the plates is much simplified. An index is provided, and any plate can be exposed at will. The general construction

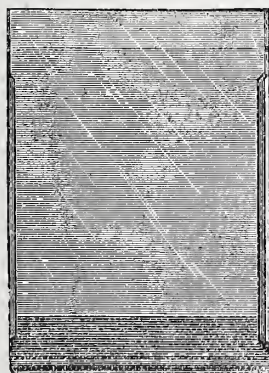


FIG. 2.

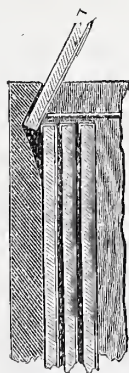


FIG. 3.

of the changing box and carriers is shown in the accompanying figures. Special holders for cut films are provided. This device can be fitted to any camera, and will readily commend itself to hand-camera workers.

## Societies' Meetings.

**Ashton-under-Lyne.**—On the 28th ult. upwards of twenty members, including seven ladies, visited Chew Valley, under the leadership of Mr. C. E. Redfern. The party met at the club premises, and were driven to Greenfield in a large waggonette. A walk of about twenty minutes from the latter place brought the party to the valley, and the members were very soon at work, securing views of the lovely scenery which surrounded them on every side. It would be an impossibility to attempt a description of this lovely spot, and although within so short a distance of Ashton, the majority of those present were unaware of this romantic place. Mr. Redfern knew the place well, and the Society were fortunate in securing him as leader. The weather was delightfully fine, in fact everything that could be desired, excepting a strong wind which disturbed the foliage. The party arrived back at the Clarence Hotel at 6.0 p.m., to partake of an excellent tea which Mr. Redfern had provided for them.

**Birmingham.**—Ordinary meeting held on the 26th ult., G. F. Lyndon, Esq., in the chair. Six new members were elected. Samples of Berkeley's "Theonine," and one of Manson's "Sensible" focussing cloths were laid on the table. Mr. A. J. Leeson gave an exceedingly interesting and instructive demonstration and paper on "The Preparation of Home-salted and Sensitized Paper by the Ammonio Nitrate of Silver Process." The demonstrator went through the different operations of salting, sensitising, toning, fixing, etc., showing very clearly the manner in which the work is done. The members present were thoroughly interested in the proceedings, and expressed great admiration of the process. The first whole-day excursion of the season was made to Buildwas Abbey and Much Wenlock Priory on the 24th ult. Twenty-three members joined the excursion under the leadership of Mr. William Jones, and 180 plates were exposed, chiefly whole-plate and larger. For the comfort of the party, a saloon was provided by the early express, and a delightful day was spent amongst the grand ruins of these exceptionally interesting places. For the information of photographers unacquainted with these historical ecclesiastical remains, it may be stated that Buildwas presents unique examples of the transition period from late Norman to early English. The extensive ruins of Wenlock Priory comprise beautiful examples both of Norman and early English work of what was once the most important monastic establishment of the Midlands, and which are now carefully preserved by their present owner.

**Barrow.**—A meeting was held on the 26th ult. A good attendance of members assembled to hear Mr. Carless give an exhibition on the development of dry-plate negatives, the first of a series for helping the younger members of the Section. Three Ilford rapid plates were given to Mr. Carless which had received different exposures, the amount of exposure being unknown to the exhibitor—one plate being under-exposed, one correctly exposed, and one over-exposed. After very careful development, all these plates turned out satisfactory, which clearly proved that they had been treated in a very efficient manner.

**Croydon (Cam. Club).**—The third field excursion of the season was held on 21st ult.; the President conducted a party of members to Nutfield and Blethingly, where several promising scenes and objects were operated upon. On May 23rd the ordinary fortnightly evening meetings were brought to a close, a considerable proportion of the members assembling to admire or criticise members' lantern transparencies, of which an unusually attractive selection were shown. Mr. Cordon's snap-shots of athletic sports (taken with portrait lens, and not in a hand-camera) were justly admired. Not less attractive were Mr. White's "Easter Manœuvres," showing our citizen soldiers braving twelve inches of snow at Chatham. But perhaps most enthusiasm was evoked by Mr. Oakley's cloud studies, taken in bright sunshine, and, in some cases, including the sun itself. The negatives were on the new Sandell plate, and the results obtained seem to indicate that the above marks an important advance in dry plate manufacture. The Hon. Treasurer (Mr. Sargeant) also passed round twin views, taken at the previous Saturday excursion, on Sandell plates; the first was given an exposure of 1 sec., the second receiving 30 secs.; the resulting negatives were almost identical, and were both technically fine examples of good silver-printing negatives, free from halation. This indicates the latitude of exposure possible with the above make of plate. Messrs. Bray and Cheshire also showed lantern slides. In notifying to those present that the end of the winter meetings had arrived, the President congratulated members on the interesting and busy season which they had passed through. Lectures or demonstrations have been given by Messrs. Maclean, White, Oakley, D. E. Goddard, B. Gay, Wilkinson, J. Weir-Brown, J. Gale, Charles W. Hastings, E. J. Wall, Clark, and others. At these attendances have been well maintained, and not only have many theoretical and practical points connected with photo-



graphy been well ventilated, but a thoroughly sociable and paternal tone has at all times been prevalent at the various gatherings.

**East London.**—General meeting 24th ult., Mr. J. Uffindell, Vice-President, in the chair. The following gentlemen were elected: Messrs. C. Dootson, G. Mogg, C. T. Oliver, Cook, C. H. Greenwood, and P. Longmore. The Secretary read a letter from the President, in which he stated he wished to resign the post of President, which was unanimously accepted. During the evening Mr. Pasco gave a demonstration on "Platinotype." Several negatives and prints of members' work were submitted for discussion.

**Hackney.**—The ordinary meeting was held on the 27th ult., Mr. Beckett in the chair. Messrs. Salmon and Sodean showed work done from negatives on Imperial plates. Mr. Gosling asked whether the difference in speed between a single and double lens was very much. A long discussion (illustrated with diagrams) then ensued, in which Messrs. Dean, Capel, Sodean, Reynolds, Poulson, and the Hon. Secretary and Chairman took part, the outcome of which was that it was thought that the difference was very slight, but that the subject should be again reopened at a future meeting. Mr. Gosling said he would like to know best mountant. He had found it somewhat difficult to mount prints on the Ilford printing-out paper. Mr. Reynolds advised strong solution of gelatine with some methylated spirits in it. The Chairman preferred strong starch. Mr. Poulson said he had seen liquid glue recommended. Mr. Sodean stated that some acid in it might overcome the difficulty in glue. Mr. Foulkes-Winkes stated that if any acetic acid were present in a mountant it would attack the silver, which was present in a fine state, and when the glue dried it would hold the acid. In the absence of Dr. Roland Smith, Mr. Grant opened the discussion on hand-cameras, in the course of which he objected rather to them. Preferred dark slides, focussing screen, and also being able to use various lenses of different foci. Mr. Gosling thought it was good for the plate-makers, as there was a greater tendency to fire away plates. Others followed, after which the Shuttle (Messrs. Houghton's), the Griffin (also a new one by this firm), Adam's Ideal, Otto, and Hat (weighing 2 oz.), and Griffiths' hand-cameras were shown.

**Holborn.**—At the monthly lantern night on 27th ult., Mr. T. O. Dear (Vice-President) in the chair, a number of slides sent by the AMATEUR PHOTOGRAPHER were thrown on the screen, followed by some by Messrs. Ellsworth, Cobb, and Miller.

**Harlesden and Willesden.**—The annual general meeting was held on the 24th ult. The Hon. Secretary having reported the work for the past year, votes of thanks were passed to the retiring officers. The following officers were then elected:—President, Mr. J. Naylor; Council, Messrs. T. Clapton, Pay, C. Winterton, H. Dale, and Lyon; Hon. Treasurer, Mr. Seed; and Hon. Secretary, Mr. W. E. Woodbury, 23, Fairlight Avenue, Harlesden, N.W. An excursion to Stanmore under the leadership of the President will take place on Saturday, June 4th, the members to meet at the booking office, Willesden Junction, at 2.30 p.m.

**Liverpool (A.P.A.).**—The monthly meeting was held on the 26th ult., Mr. W. Tomkinson, the President, in the chair. Two new members were elected. Mr. Schierwater introduced a discussion on "Film Photography," giving his experience of the use of films by different makers, and showing an ingenious carrier for the dark-slide, and also one for the developing dish of his own construction. Mr. A. W. Beer stated that in a tour on the Continent last year, he with a friend used twenty-four dozen 10 by 8 films with most satisfactory results; and hoped to do the same again this year. He had not the least difficulty with development, as by keeping the bottom of the dish wet the film would lie perfectly flat by suction. Mr. Paul Lange expressed his intention of taking thirty dozen 5 by 4 to Norway with him next week, the weight being 6 lbs, instead of half hundredweight, which it would have been if he had taken glass. The President then called upon Mr. John Carbutt, of Philadelphia, the well-known manufacturer of Carbutt's films, who in passing through Liverpool had kindly accepted the Secretary's invitation to be present at the meeting. Mr. Carbutt said that films were rapidly coming into favour with amateurs for outdoor work, because they were now quite reliable. The defects in the earlier films put upon the market were found to be caused entirely by the chemical composition of the celluloid, but after numerous experiments this had now been remedied. Mr. Carbutt exhibited some large prints about 4 feet by 2 feet, which had been taken direct upon films with a Panoramic lens. He also showed two very ingenious cameras, the Genie and the Henry Clay. Mr. Archer exhibited an apparatus for drying negatives, the Cytox hand-camera, and the Eiffel Stand for half-plate camera, weight 16 oz. An exhibition of lantern slides followed, and the proceedings closed.

**Liverpool (Camera Club).**—The usual meeting was held on the 25th ult., Mr. J. Herbert Jones in the chair. One new member was proposed and duly elected. Continuing the series of "Half-hours with Elementary Photography," Mr. H. Handley gave a demonstration on "A Simple Developer, and How to Use it." The developer

used by Mr. Handley is simplicity itself, consisting of pyrogallic acid, bromide of potassium, and washing soda, and in his able hands produced some very good negatives. On the motion of Mr. Hawkins a cordial vote of thanks was passed to Mr. Handley. "Hand-Cameras" was the next subject. Various members brought their cameras, and explained the construction and working, also exhibiting samples of work. The subject for the next meeting is "The Camera, and How to Use it," by the President.

**Phot. Soc. Great Britain.**—Technical meeting 24th ult., Mr. E. Clifton in the chair. Mr. Heyburn, representing Messrs. Ross and Co., read a paper describing their new Concentric lens. Several of the lenses were on exhibition, and were tested at the close of the meeting in Messrs. Ross' lens testing apparatus. At the conclusion of the paper, Mr. J. Stuart presented the society with a copy of Dr. Schroeder's "Die Elemente der Photographischen Optik," the standard German work on the subject, and remarked that Dr. Schroeder had endeavoured in it to deal with many points ignored in most textbooks, the latter generally passing over the question of the oblique pencils, etc. Mr. Debenham discussed several points in the paper, and said that, from the reason given for the absence of distortion with the new lens, it should be free from it when one combination only was used. Mr. Stuart said that was the case; it gave absolutely straight lines as a single lens, the Gauss points were exactly in the centre. Mr. Debenham could not understand why the lens should require less exposure, because the marginal definition was better. If that were the case, an out-of-focus picture would be under-exposed, while a sharp picture would be fully exposed in the same time, and this was not the case. Mr. Stuart said that the lens was undoubtedly faster than any other lens of the same aperture and focus. One reason for this was the fact that no flint glass was employed. On comparison with a rapid symmetrical, the difference in colour was very noticeable, and this would make a great difference. Mr. Debenham said he had not suggested that colour did not make a difference; that point had not been raised before, but it could not be so very great after all; the symmetrical lenses had not got deep yellow or green glass. Mr. Wenham said that it was possible to construct the new lens to give a concave field; but that in its proper form it gave a perfectly flat field. Mr. Debenham asked if it gave a flat field for near objects, whether it would not necessarily have a concave field for distant objects? Mr. Wenham said, "Most distinctly not." From a right line it gave a right line again, no matter what the distance of the object might be. Mr. Tottem, of Messrs. George Houghton and Son, exhibited and described the "Shuttle" hand-camera of that firm. Mr. Askew exhibited a new form of lantern box; the lantern, an oil one, and all accessories except a screen, could easily be carried on a bicycle and erected very quickly. He unpacked the apparatus, fixed it, and threw a picture on the screen within five minutes. Mr. W. G. Blackie, of the Blackfriars Sensitizing Company, exhibited and explained the Anschutz instantaneous camera and tripod with universal joint. Mr. Sharp, of Messrs. Sharp and Hitchmough, exhibited and described their "Aptus" Universal Camera.

**South London.**—Ordinary meeting on the 16th ult., the President, Mr. F. W. Edwards in the chair. After the close of the formal business, Mr. W. I. Chadwick, of Manchester, delivered a lecture on "Stereoscopic Photography." The lecturer said the first thing to be understood was the reason why it was necessary to have two pictures to prevent complications and difficulties arising. He proceeded to explain this by remarks on monocular and binocular vision, illustrated by diagrams of the human eye on the blackboard, referring particularly to the difficulties of a person with one eye judging the distance of various objects. A man with one eye could only do so by size, and it could easily be shown that in many instances his judgment could not be relied upon. A man with two eyes did not judge distance by size alone, but, by reason of the convergence of his eyes, saw objects solid, or, in other words, in relief. If two pictures were produced such as would be seen by each eye, and were viewed at the same angle, the objects depicted would be seen of the natural size and with the same amount of relief. He then showed the diagram of a box which he had made some years ago, by which pictures taken with lenses of different foci appear of the same size, and the person who viewed them would be unable to tell which picture was taken with the longer or shorter focus lens. After explaining the principles of the stereoscope, he showed the apparatus which he used to produce negatives and transparencies. In making negatives it was necessary to have two lenses of equal focal length and mounted on the lens board three inches apart. In making prints from the negatives, the centres of the pictures were reduced to  $2\frac{1}{2}$  in. or  $2\frac{3}{4}$  in. apart, a distance equal to that which the eyes are apart. The position of the two pictures were also reversed after printing, the right-hand picture placed where the left was, and the left-hand picture where the right was. When the various operations were successfully performed, and the two pictures viewed in the stereoscope, the objects depicted appeared as in nature, each standing out in advance of the others in their proper position. After an address of about one



hour's duration, a series of questions from an appreciative audience were asked, and lucidly and humorously answered by the lecturer.

**Staff. Potteries.**—The first excursion for the season took place on 28th ult. The place visited was Biddulph, where many pretty bits for the camera are to be found. The Old Hall, which dates back a few centuries, is now in ruins, thanks to Oliver Cromwell. The Clough adjoining is a lovely dell running down to the valley, with beautiful bits of water and foliage. A good number of plates were exposed and, as far as can be ascertained, the results are very good.

**Sheffield.**—The first excursion of the season was held on the 25th ult., starting from Masonic Hall, after some little delay on account of the weather. The members had a splendid drive to Haddon Hall *via* Bakewell, and after having exposed all their plates adjourned to the "Castle Inn," Bakewell, where justice was done to an ample repast. The members again remounted the drag-*en* route for home, the weather turning out all that could be desired.

**Tyneside (Camera.)**—On 21st ult. there was a club outing to Marsden Rocks and the coast. There was a large turn-out of ladies and gentlemen. Plates were exposed on the famous Marsden Rock, Bottle Rocks, and others. There was an unpleasantly strong west wind and sundry sharp showers brought the waterproof focussing-cloth into frequent use; notwithstanding the weather, a very pleasant day was spent.

### SOCIETIES' FIXTURES.

- June 2.—LEEDS.—"Printing-in Clouds in Lantern Slides," Mr. F. W. Branson.
- " 2.—LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION. "Tele-Photographic Lenses," Mr. Thos. R. Dallmeyer.
- " 2.—HEREFORDSHIRE PHOTOGRAPHIC SOCIETY.—Excursion down the river by boat.
- " 3.—CROYDON.
- " 3.—LEWISHAM HIGH ROAD CAMERA CLUB.—Demonstration, "Practical Photography," by Mr. H. Bedford Lemere.
- " 3.—HOLBORN CAMERA CLUB.—Discussion, opened by Mr. H. West, "Hints on Landscape Photography."
- " 3.—PEOPLE'S PALACE PHOTOGRAPHIC CLUB.—Technical Evening.
- " 3.—RICHMOND CAMERA CLUB.—Informal Meeting.
- " 4.—WEST SURREY PHOTOGRAPHIC SOCIETY.—Outing to Ashstead.
- " 4.—GRAPHIC SOCIETY (Plymouth).—Excursion to Restormal.
- " 4.—OLDHAM PHOTOGRAPHIC SOCIETY.—Outing for Rochdale for Healey Dell.
- " 4.—CARDIFF PHOTOGRAPHIC SOCIETY.—Ramble to Risca.
- " 4.—LIVERPOOL AMATEUR PHOTOGRAPHIC ASSOCIATION.—Excursion to Speke and Hale (half-day).
- " 6.—HOLBORN CAMERA CLUB.—Official outing to Penshurst, Kent. Meet at Charing Cross Station at 9 a.m.
- " 6.—PEOPLE'S PALACE PHOTOGRAPHIC CLUB.—Outing to Rochester and neighbourhood.

June 6.—RICHMOND CAMERA CLUB.—Excursion to Penshurst and Chiddingstone.

- " 6.—BRIGHTON AND SUSSEX NATURAL HISTORY AND PHILANTHROPIC SOCIETY.—Excursion to Bosham, 8.50 a.m.
- " 6.—Y.M.C.A. CAMERA CLUB.—Ordinary Monthly Meeting.
- " 6.—CROYDON N. AND P. H. CLUB.—Excursion to Cowdre, Holtype Common, and East Grinstead.
- " 6.—CARDIFF PHOTOGRAPHIC SOCIETY.—Ramble to Glyn Neath.
- " 7.—STAFFORDSHIRE POTTERIES PHOTOGRAPHIC SOCIETY.—Exhibition, Apparatus, Members' Work; and Paper, "How to Use Camera," by Mr. J. Wedgwood Wyatt.
- " 9.—LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION. Members' Open Night.
- " 10.—HOLBORN CAMERA CLUB.—Mr. E. Clifton will discourse on "Development in Practice."
- " 10.—RICHMOND CAMERA CLUB.—"Toning with Salts of Platinum," Mr. Ardaseer.
- " 11.—ISLE OF THANET.—Excursion.
- " 11.—PAISLEY PHOTOGRAPHIC SOCIETY.—Excursion to Rose-neath.
- " 11.—OLDHAM PHOTOGRAPHIC SOCIETY.—Ramble.
- " 11.—EAST LONDON PHOTOGRAPHIC SOCIETY.—Excursion to Waltham.
- " 11.—CARDIFF PHOTOGRAPHIC SOCIETY.—Ramble to Porthcawl, Bridgend, and Merthyr Mawr.
- " 13.—ACCBINGTON.—Monthly Meeting.

### THE "OPTIMUS" 100 GUINEA COMPETITION.

THE conditions, classes, and prizes of the above competition, are as follows:

A. That the lenses used should be of the well-known "Optimus" brand.

B. All the prints sent in to this competition shall become the property of Messrs. Perken, Son, and Rayment. The negatives of the prize prints shall also become their property.

#### CLASSES.

(1) Landscape, with and without figure. Subclass A, 7 by 5 and under; subclass B, 8½ by 6½ and over.

(2) Seascape. Subclass A, 7 by 5 and under; subclass B, 8½ by 6½ and over.

(3) Portraiture and figure study. Subclass A, 7 by 5 and under; subclass B, 8½ by 6½ and over.

(4) Instantaneous work, including also hand-camera work, limited to 5 by 4 and under.

#### PRIZES.

Apparatus to the value of:—

Class 1.—Subclass A, prize, £15; subclass B, £15.

Class 2.—Subclass A, prize, £15; subclass B, £15.

Class 3.—Subclass A, prize, £15; subclass B, £15.

Class 4.—First prize, £15.

The competition is open to all—AMATEURS and PROFESSIONALS.

## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

#### RULES.

1. Write clearly and distinctly on one side of the paper only.

2. Write each Query or Answer on a separate sheet of paper.

3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.

4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.

5. The Editor does not undertake to answer questions by post.

6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

### QUERIES.

5708. **Norway.**—I shall feel greatly obliged for any information on the following subject. Is the light in Norway sensibly the same as that in England, and would Wormald's "Practical Index" give correct results, or have the exposures to be reduced, and if so, by how much? Also, can Ilford plates (English sizes) be bought in the principal Norwegian and Swedish towns?—E. GRAHAM.

5709. **St. Peter's Port.**—Will anyone kindly oblige by naming a cheap boarding house or hotel near St. Peter's Port, for a short stay in Guernsey?

5710. **Norwich.**—I shall be glad of information as to what is worth photographing in and near Norwich, as I intend spending a few days there shortly?—H. M. S.

5711. **Speed of Shutter.**—Shall be obliged if anyone can give me the speed of Kershaw's shutter as supplied with Swinden and Earp's hand-camera by the number of turns of speed knob.—SIRRAH.

5712. **Silhouette.**—Can any one please tell me how I can copy the above so as to get *quite* black results; what developer, plates, paper are best to use?—PERSEVERER.

5713. **Tricycle for Tour.**—Will a brother amateur kindly recommend to me a good make of tricycle for a photographic tour this summer? Expense is not an object, but as I am a trifle over 13 st., comfort is most desirable?—ANGLO-INDIAN.

5714. **Dark Rooms.**—I am going to Ramegate, Margate, Dover, Brighton, and Eastbourne with a hand-camera, so would be glad if any kind reader could tell me if there are any dark-rooms at the above places I could use for changing, and would it be the best to take the plates with me, or should I have to buy the plates where I changed.—SNAP SHOT.



# QUERIES UNANSWERED.

May 6.—Nos. 5660, 5662,  
 „ 15.—Nos. 5670, 5672, 5673.  
 „ 20.—Nos. 5680, 5681, 5682, 5683, 5684, 5688, 5689,  
 5690  
 „ 27.—Nos. 5694, 5695, 5696, 5697, 5698, 5699, 5701,  
 5703, 5706, 5707.

# ANSWERS.

5687. **Brittany.**—If "Alpha" will write to me (address with Editor) I shall be glad to give him what information I can.—H. NOEL MATAN.

5691. **Inverness.**—Mr. Brodie will find some pretty views in the Ness Islands, about one mile from the railway station; also at Tomnahurich Cemetery. But the finest pictures can be got from the castle hill looking down the river, and embracing the two suspension bridges and the distant hills of Ross-shire. The suspension bridge and castle make a very fine picture taken from opposite the Glenalbyn Hotel.—A. J. BEATON.

5692. **Chester.**—There are many quaint and interesting "bits" about the streets of Chester well worth spending a plate on. R. H. should have a trip up the river to Eaton Hall, which is open to the public. I do not think the Grand Old Man will object to have his castle or himself once more photographed. Waggonettes run from Chester to Hawarden Castle daily. R. H. should get a view of Hawarden village while at the castle.—A. J. BEATON.

5700. **Dubroni's Camera.**—The camera "Luxor" refers to is evidently Dubroni's camera for the wet-plate process, and it is no longer made by Dubroni. As, however, I used one of these cameras many years ago, I can give him a slight sketch of how it is used. Full details would occupy too much space. The speciality of this camera is, that it forms its own dark-room; in the smaller sizes the camera body itself is lined with glass, but in the larger sizes the detachable back is only so lined; but the manner of using either kind is the same. In addition to the camera there are required at least two (three are better) india-rubber balls with a bone tube attached to them like injection bottles; one of these is kept for the silver bath solution, and the other for the developer, the spare one is convenient for water. Now proceed as follows:—Arrange the camera and focus on a piece of ground-glass behind the opening in the camera, and make some mark on the stand so as to be able to replace the camera in the same position when the plate is sensitised (in the larger sizes this is unnecessary, as the back is alone removed), cap the lens, remove the ground-glass and dust out the inside of the camera, then clean and collodionise the plate and place it, collodion side towards the lens, in the camera, and close the back; by means of one of the india-rubber balls introduce the silver bath into the camera through the hole on the top, which has an inside flap to it, seize the camera by the handle and turn it steadily over, so that the bath flows over the plate, leave it so for a few minutes till it is properly sensitised; this can be seen if required by means of the red or orange door at the back, the lens being covered with the red screen; remove the solution by the same means and return it to the bottle. Now expose and recap the lens. Introduce a little water into the camera the same way, and remove it. Now with the other ball introduce the developer and flood the plate as for sensitising (the progress of development can be watched through the glass at the back and screen over the lens); when sufficiently developed, bring the camera to the upright position, and remove the developer; now wash the plate twice with water in the same way, remove the plate, and if plenty of water is at hand rinse it and put it into a grooved box to be fixed on the return home, dry the interior of the camera and proceed to the next picture. This camera is capable of giving good results, and has the advantage of not soiling the hands. Of course, the negative can be intensified, if wished, the same way that it is developed. Details of the wet process can be found in the text-books.—J. G. P. VEREKER.

5702. **N. Wales Walking Tour.**—1st day: I would recommend "Ruetama" to make Bettws-y-Coed his starting point; put up at the Gwydyr Hotel. There are many very interesting spots about the village; a whole day could be profitably occupied here. 2nd day: Start next day for Capel Curig and pass Pen-y-gryd Hotel, made famous by Kingsley in his "Two Years Ago." Continue through the Pass of Llanberis. Stay at Dolbadarn Hotel. Snowdon can be ascended from here. 3rd day: Train to Carnarvon, where the fine ruins of Castle can be photographed. Train to Dinas Junction, join the Toy Railway to Rhyddu, thence coach or walk to Beddgelert; put up at the Saacen's Head. 4th day: Spend morning in visiting places of interest, and return by forenoon coach and train to Carnarvon, and thence to Bangor, or walk back Nant Gwynant Pass, skirting the Snowdonian Range on the Pen-y-gryd. Hotel, where you can walk over the Glydrys to Nant Francon Pass, about five miles, and three miles further will land you at the Penrhyn Slate Quarries, and five more miles you arrive at Bangor, passing the famed model village of Llandudal and Penrhyn Castle. In Bangor nothing except the Cathedral is worth exposing for. Hotel: Station Hotel. 5th day: While at Bangor do the Suspension Bridge and Tynbar Bridge, and Cross Ferry, the Begu-

maris Castle, three miles from Bangor. Return by train to Conway, close to Llandudno. You will then have completed the circuit of picturesque Wales, and seen all worth visiting. The hotel expenses range from 8s. 6d. to 12s. per day, and the railway fares over the routes recommended commenced at Bettws will be about 6s. only. Study a good map before starting.—A. J. BEATON.

5704. **Exposure Meter.**—I can thoroughly recommend Watkins' Exposure Meter, having used it continuously during the past year. The right exposure depends on four elements:—(1) actinic power of the light, (2) rapidity of plate, (3) reflecting capacity of the subject, (4) size of the stop. The meter measures No. 1 by sensitive paper; moveable rings on the instrument combine the effects of the other factors, and show the required exposure without any need for calculation. Clear and detailed instructions are sent with the instrument. Perhaps Mr. Watkins might send you these instructions, which give more detail than there is room for here.—A. E. W.

# EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE TUESDAY MORNING'S post if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—ED. AM. PHOT.

E. H. MIDGELEY.—After some considerable trials we have been unable to obtain any free cyanogen from a sulphocyanate, so more than likely your last letter was right.

P. PURDON.—We should say that over-exposure is the fault you have to contend with. The portrait is very good. Expose a plate and send it up, and we will develop for you.

KENNETH.—All your prints are over-printed. It would be an extremely easy matter to print in the distance from 2B to 2A, by suitable masking.

EDWIN A. MANSFIELD.—We should have liked your print better had the figures been replaced by a figure fishing, and with a little more detail in the water. It shows good careful work, and is far above some we get in competition.

H. M. S.—(1) D lens is the most suitable for portraiture and outdoor work. Beyond this obtain a short-focus lens; let us suppose that you would get a 10 in. D lens, we would suggest a 6 in. Ross' concentric lens. (2) We should go for the A camera; it is very good value and well made.

M. HAFEN.—Your microphotograph is very good, but would have been improved with a little longer exposure.

W. NORTHWOOD.—Have you never heard of sour grapes and a fox? We are satisfied, rest you so also.

J. T. HYNES.—You evidently have an exalted idea of our capabilities, and it was a little unkind to say you prize the negative very much, because we were in fear and trembling the whole time of doctoring. However, we did it after half an hour's work, by soaking in water and rubbing gently with the finger, so return you your negative in good condition. Don't do it again; we mean put wet negatives face downwards on paper.

T. PATTERSON.—(1) We do not care for the method of changing at all. R.R. at 7/8 is the best. (2) The camera is very good; see p. 439. We have never found any difficulty in judging density. The waste in cutting off one or two exposures is very little, and can be lessened by sticking black paper on to cut end and winding that on first.

R. W. B. J.—We should strongly recommend you to get a Euryscope either from No. 5 or No. 6. Or else look out for one in our Sale and Exchange column.

FRANK.—(1) If you send prints up carriage paid, and enclose stamps for return, we will criticise. (2) We would develop two plates only for you, and want to know stop, time of day, light, exposure, and plate, you to pay carriage. (3) Send addressed envelope for entry form, and you will see all conditions. (4) There is no examination necessary before starting as a professional. (5) If an amateur sells his prints he is, we think, no longer eligible to be classed as an amateur; there is nothing to prevent anyone from doing it. It is not illegal. If there is to be any distinction at all between amateur and professional, we think personally that the line should be very strictly drawn; according to our views, which are not general though, anyone who practises photography, and sells his prints or negatives for a pecuniary consideration, is no longer an amateur, even although he may not make any profit on his outlay in general, yet he must make profit on that one transaction. On the other hand, if we were asked to write an account of a tour, and illustrate the same by means of our own prints, and received an honorarium for it, we should not consider we were trenching on the professional's ground, because the prints would be of secondary consideration. (6 and 7) You must send us up a list of names and prices you could give; we would then help you with advice. (8) The best lens for architectural work is an R.R. or short-focus doublet. (9) See answer to 6 and 7.

ALPHA.—(1) The illumination of the plate is ex-

remely unequal, probably due to the shutter; plates under-exposed and fogged; would have been improved by slightly reducing before intensifying. (2) Illumination again unequal. (3, 4, 5, 6, 7 and 8) Ditto. For instantaneous work you must use a more rapid plate; you have plenty of choice. Abandon hydroquinone altogether, and if you object to the staining property of pyro, try Rodinal. 6, 7, and 8 are good subjects, but in all there is too much foreground. Do you wash your plates well after bleaching and before blackening? We think not. With regard to your damaged negative, we would point out that it is also stained with silver from contact with damp sensitised paper. If you like we will hand it to the man who does our work for us, and who has made very successful jobs of some bad cases. Let us have a line. The subject and treatment are so good as to warrant your going to some expense over it.

C. H. GRANT.—Nothing can be done to the prints. The bromide print is either fogged by exposure to light or else by the use of too strong a developer, dilute your developer, and add more bromide of potassium.

RUSTIC.—(1) This would certainly be improved by cutting out the tree on the left altogether, and also some of the unnecessary foliage at the top. The dress of the girl is a little too white. (1A) Ditto. (2) The tree is again a little offensive. (3) Good. Please abandon the silver paper you are using, it increases the contrast so unnaturally. It is a fault we have to find with every print received from your town, big workers and all. What do you use as a developer? All your prints have a tendency to chalkiness in the high lights. You ought to come out pretty high in our competitions; we shall be very glad to send you a silver medal when you win it. Your work has for some months shown considerable promise, though you generally fail in trying to use the whole of the negative; you seem afraid to trim down.

J. C. WADLINO.—Thanks for your letter; we have your print duly to hand, and we shall get in an extra supply of verjuice and a fresh pen, so as to give you a stinging criticism, though we rather liked the print at first glance. We have not been so successful with the plates you name as some of English make; they seemed to us to be unable to stand pyro and ammonia so well as we should like. We will, however, try them again. You ought to send us some good work. You have a lovely country round you.

J. G. FINLAYSON.—So much depends upon the character of the negative, but if you print deeper on the chloride paper you ought to have no difficulty in obtaining purple tones. If you cannot obtain them send us up negative and paper, and we will try.

H. JARVIS.—Many thanks for MSS. duly received. WINTER.—When your gelatine solution is warm, slip the glass plate into it, then immerse the print for about five minutes, bring into contact, squeeze and leave to dry.

H. A. C.—If you use an ethereal solution of wax and resin you will not find any traces of dirt, etc.

|                             |         |
|-----------------------------|---------|
| Dissolve yellow resin .. .. | 36 grs. |
| Yellow wax .. ..            | 12 "    |
| Turpentine .. ..            | 2 oz.   |

J. FAULKNER.—Write to the City Sale and Exchange Rooms, 54, Lime Street.

W. B. JONES.—There has been a drop in platinum, we believe, but nothing like 75 per cent. We are very sorry, but the firm named know what they are about, and we never attempt to teach people what price to sell at; it's not our business.

H. PRESS.—The simplest plan is to make a transparency by contact printing from the small negative, and then enlarge that on to a plate. You can, however, employ the plan you suggest.

F. E. ROOPE.—Yes, we shall be pleased to develop the two plates for you with pyro. Use rapid plates, and let us know full particulars as to stop and exposure.

POTO.—In the ordinary acceptance of the word, you are still an amateur. See our reply to "Frank" in this column.

J. H. C. C.—The negative is a little under-exposed, otherwise it is good technical work. We get many worse in our competitions.

E. WHITEMAN.—The only plan we can suggest is to place wet blotting-paper on the prints and then strip when sufficiently wet.

H. STERL.—We should certainly say, make the men group themselves round the two waggonettes, some on the box, some in the waggonettes, and some on the ground. Use as rapid a plate as you can get. We cannot tell you which is the cheaper route; your better plan is to write to both companies and compare prices.

H. M.—Over-printing is the cause of your poor print; we should say that intensifying the negative would improve matters.

T. F. B.—(1) Yes, the new is decidedly an improvement. (2) Fitch's ordinary flat films would fulfil every requirement, and are as easy to work as plates. (3) Rodinal is, we think, an improvement on hydroquinone and eikonogen for snap-shot work. For ordinary work stick to pyro and ammonia. The only thing to do to get softer negatives is to reduce the pyro, or increase ammonia. The American standard gives rather more contrast than ammonia. We have never found it fail to give density; the fault is the other way, if any fault exists. Rodinal will give you very soft negatives.



L. G.—We should say the reason of your not being able to get good results is that the lens is very slow, that is works at a small aperture. We should advise you to try Rodinal for snap-shots. Let us have two exposed plates and we will develop them for you, and then write you as to our method.

R. G.—It is essential to use a covering glass for lantern slides.

E. W. MALE.—The glazed surface is most suitable for 1/2-plate pictures. It is no easy matter to make a matt-surface emulsion. It will cost you far more than the commercial. The solution of carbonate and sulphite will keep a reasonable time.

DOZEY, G.—(1) We still adhere to the idea that it is the developer; it is too strong in caustic alkali. Add more water and bromide, or send us up a sheet or two to try. (2) You must let us know the equivalent focus of lens before we can answer this, and will not our "Notes on Enlarging" help you?

CHIRURGON.—There is no reason why you should not use your Instantograph lens and shutter for seascapes; it is quite fast enough. There is no necessity to use the R.R.

H. J. FISHER.—You should keep your gold solution separate, and only make up the bath as wanted. You can improve your stock solution, but it is hardly worth while, as it never works so well when treated. You ought to have used distilled water, and we should say your jar was not chemically clean. Write again if you are determined to rectify bath.

H. F. LINGING.—Unfortunately, our block cutters did not let us have the same in time. We include this week. The phenomenon you mention is well known, but unexplainable; it would be a risky local reducer.

IVY.—Marion and Co., 23, Sobo Square, W.

A. G. PATERSON.—(1) Either the plates are stale or your developer is not good. Discard the plates or else use pyro and soda. (2) To include distant mountains, use No. 2 plates with a pale yellow screen, and commence development with 1-10th of a grain of pyro to the ounce, normal bromide, normal ammonia; and then when all detail is out, pour off developer, and apply equal parts of

|                       |         |
|-----------------------|---------|
| Pyro .. .. .          | 64 gr.  |
| Citric acid .. .      | 15 "    |
| Distilled water ..    | 4 oz.   |
| 2.                    |         |
| Liq. ammonia, '880 .. | 2 drms. |
| Ammonium bromide ..   | 180 gr. |
| Distilled water .. .  | 4 oz.   |

and continue development till density is secured. You ought to have a long-focus lens for distant work.

W. J. JONES.—You are an exception and sadly handicapped. You will find on p. 439 of this issue a notice of some new Kodaks which are much lower in price, and would answer admirably for your work. Which arm have you lost? We will, if you write us again, write you by post more fully.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m., and other communications having reference to the Sale and Exchange) column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Belows.**—Leather bellows for band-camera, quar-

ter-plate, 2s. 3d.; 5 by 4, 2s. 9d., post free.—Field, Montana, Blackheath, S.E.

**Bicycles, Tricycles, etc.**—Special rapid 28 guinea tricycle, direct steerer, splendid condition, sacrifice £8 10s.—J. Daxley, Filton, Rugby.

Cushion-tyre Safety for sale, ball bearings all parts, including pedals, nickel plated, perfect condition, been very little used, good bargain, good make, for immediate cash, would accept £6 10s.; approval willingly; cannot fail to give satisfaction.—T. E. W., 34, Hill Street, Ipswich.

**Cameras, etc.**—Grand stereo and half-plate Meagher camera, best possible, made special order, many novelties, six double slides, carriers, extra panels and fronts, Pickard shutter for all lenses, £13 10s.; great sacrifice. Lenses (all tested) may be had separately, as advertised below under "Lenses."—15, Holmeside, Sunderland.

Whole-plate wide-angle extension camera with three best double book slides, £5 10s.—A. B., 21, Healey Street, Kentish Town.

On sale, Lancaster's Omnigraph with extra slide, cost 32s. 6d., will sell for 18s. 6d., as new.—Joseph Berry, 20, Ash Street, Great Lever, near Bolton, Lancashire.

Quarter special Instantograph, three elides, brass bound, three-fold stand, leather-bound case, quite new, unused, cost £4, price £2 16s.—126, Calabria Road, Highbury, N.

**Cameras, Lenses, etc.**—Ross' 8½ by 6½ rapid symmetrical, £4 10s.; modern whole-plate bellows camera, three double backs, all latest improvements, £5; Dallmeyer 5 by 4 R.R., £2 15s.; half-plate Black Band Rectigraph, French Iris diaphragms, £2 5s.—J. Biddle 97, Medlock Street, Manchester.

New single 10 by 8 acromatic view lens, with revolving diaphragm, £2 2s.; Casquet, Darlot's, interchangeable lenses, various foci, revolving diaphragm, £5 5s.; Wray's whole-plate W.A. landscape lens, nearly new, £2 2s.; Shew's quarter-plate Bellipse hand-camera, three double backs, finder, bag, and tripod, cost £7 10s., for £4 4s.; enlarging folding camera up to 18 by 14, also suitable as field camera, double dark slide, and tripod, complete, £3 10s.; approval; deposit.—No. 298, office of this paper, 1, Creed Lane, E.C.

**Double Backs.**—Four double backs for hand-camera, quarter-plate, well made, 3s. each, or 10s. 6d. the four.—Field, Montana, Blackheath, S.E.

**Hand-Cameras, etc.**—No. 1 Kodak, 80 exposures in excellent condition and full working order, £3; also London Stereoscopic Company's Artist camera, in leather case, complete, £10.—S. Barker, 18, First Avenue, Brighton.

For sale, Diamond hand-camera, quarter-plate, nearly new, in perfect condition. Offers?—No. 295, office of this paper, 1, Creed Lane, E.C.

Hardly used Facile detective camera, splendid condition. Offers?—John R. Williamson, Guildford.

For sale, No. 5 Kodak folding camera, fitted with legs to work time exposures. To be seen by appointment with L. Asbburner, 9A, Gloucester Place, Portman Square.

Optimus book hand-camera, R.R. lens f/6, three double backs, leather sling case, cost £6 10s., for sale or exchange. Want 12 by 10 dishes and printing frames.—Kilburn, West House, Bishop Auckland.

Twin lens, Stereoscopic Company's Artist hand-camera, guaranteed, perfect condition, with three extra backs and solid leather travelling case, recently cost £19 4s. net.—Dr. Whitaker, Westhoughton.

Adams' Ideal hand-camera, new last summer, in perfect condition, carries 12 quarter-plates, with best R.R. lens and shutter, price only £6; on approval if required.—R. F. Housman, Lancaster.

Krueger's book-camera for plates about 1½ in. square, complete, with printing frame for ten negatives and a dozen plateholders for developing, 35s. the lot.—M. Hodgson, The Museum, Kenil.

Sale, Kodak No. 3 Junior, films, £6 10s.—E. Phillips, Bridge Street, Leatherhead.

Marion's Radial hand-camera, good condition, new last season, cost £7 15s., will accept £6.—Arthur, 16, Perry Road, Acton, W.

**Lenses, etc.**—Splendid half-plate R.R., iris diaphragms, movable hood, never used, bargain, 17s. 6d.—L., 8, Kenilworth Road, Kilburn, N.W.

Bargains! Pair Wray's W.A.R., 3 in focus, Stereo's, £4 1s.; pair Taylor's 4 in., £4 16s.; pair W.A.V., iris, £3; Wray's latest R.R., iris, 5½ focus, £2 13s.; ditto, 5½ in., £3 9s. 6d.; ditto, 11 in., £4 4s.; ditto, W.A.R., 3½ in., £2 1s.; all new; latest makes; Jena glass; carriage free.—15, Holmeside, Sunderland.

Excellent half-plate R.R. lens by London Stereoscopic Company, 37s. 6d.—L. R., Holmwood, Walton Park, Clevedon.

Sale or exchange, landscape lens, iris diaphragm, covers 12 by 10, £2 10s.; Ross' No. 3, 5 in. focus, wide-angle symmetrical, covers whole-plate, £8. Wanted, same lens, No. 5, to cover 12 by 10s.—Pollard, East-view, Western Road, Cheltenham.

W.A. 8 by 4 lens, with hand shutter by Photo. Artists' Supply Association, good as new, 20s.—R. D. Gray, Howth, Dublin.

Optimus wide-angle symmetrical 7 by 8 lens for sale, only used few times, 42s.—Smith, 176, Birchanger Road, South Norwood.

Ross' rapid symmetrical 8 by 5, stops, etc., say 70s.; may be inspected.—J. T. S., Pattiswick Hall, Braine.

12 by 10 Dallmeyer R.R., Waterhouse diaphragms, £7 10s.; 8½ by 6½ Taylor and Hobson, iris diaphragm, £3 7s. 6d.; 1A W.A.R. Dallmeyer, £3 15s.; 6½ by 4½ triplet Dallmeyer, £2; 6½ by 4½ single landscape, rotating stops, 7s. 6d.; 5 by 4 single landscape by Rouch, rotating stops, 7s. 6d.—Field, Montana, Blackheath, S.E.

**Sets.**—12 by 8 landscape camera, square, long-extension, swing-back, rising and falling front, reversing frame, three dark slides (in case), two slides for paper negatives, Morgan and Kidd rollholder (in case), Suter 12 by 10 applanat lens, tripod, whole cost over £30, will take £15; all nearly new.—G. W. Thompson, 234, Kentish Town Road, London, N.W.

Half-plate long-focus camera (Middlemire's patent), three slides, tripod, Optimus rapid rectilinear lens, £7.—33, Victoria Street, Sheffield.

15 by 12 camera, London Stereoscopic Company's best make, three double dark elides, best iris, R.R. lens, leather travelling cases, price moderate.—Apply, Sir G. Clerk, office of this paper, 1, Creed Lane, E.C.

Complete £10 10s. half-plate photographic outfit, by Stereoscopic Company, condition as new, £5 5s.—C. W. White, Hillside, St. Germain's Road, Forest Hill, Kent.

Whole-plate camera, long extension leather bellows, rising and sliding front, swing back, two double dark slides with carriers, R.R. lens, giving splendid definition, tripod stand, etc., in neat case, £6 6s. On view at 54, Lime Street, City.—Forsyth, 31, Saxon Road, South Norwood.

Riley Brothers, Stanley, half-plate set, reversing back, rapid rectilinear, three double dark elides, folding tripod, dishes, chemicals, etc. Presto hand-camera, small lantern and slides, violin and case, Optimus printing machine, all new, cost £13, take £9, or offers? Money returned if not approved.—C. Stewart, 7, Sawmillfield Street, Glasgow.

Half-plate Instantograph set with Optimus wide-angle lens; sell cheap.—Warner, Hyde Street, Winchester.

Marion's half-plate camera, R.R. lens, two double dark slides, tripod, waterproof canvas case, all latest improvements, cost £7 10s., new last summer, price £4 10s. Seen by appointment.—S. Hosford, 503, Holloway Road, London, N.

High-class half-plate outfit, long-extension camera, double swing back, double cross fronts, and three double elides, rapid symmetrical lens, Maudsley sliding stand, canvas case, and various sundries (photo and list on receipt of stamp), price £7.—Thos Pearce, Albion Street, Hull.

Lancaster's quarter-plate Instantograph set, complete, 30s., perfect condition.—211, Crystal Palace Road, East Dulwich.

Compactum quarter-plate camera, lens, slide, tripod, new, 12s. 6d.—Merrett, Photographer, Stroud.

Lancaster's quarter-plate Instantograph (old pattern), lens, tripod, six metal double slides, waterproof case. 15s.—F. Hutelings, 66, Peckham Road, Camberwell.

Watson's 10 by 8 Premier camera, three slides in solid leather cases, tripod, Dallmeyer's rapid rectilinear lens, Grinston and flap and drop shutters, cost £28, price £15, or separate. Can be seen in London.—Fisher, 9, Percy Terrace, Newcastle-on-Tyne.

To be disposed of: A complete 7½ by 5 photographic outfit, comprising a beautifully finished mahogany camera, with square double extension bellows, rising and falling front, sliding reversible back, and all latest improvements made especially for the present owner, two double dark slides, well-made tripod and top, a whole-plate portable symmetrical lens, and a few sundries for developing and printing, all the above quite new and perfect, price, complete, £7 10s.; no lower offer will be entertained; approval with Editor if desired.—Apply to Mr. Congdon, 17, Prince's Street, Hanover Square, W.

Bargain, 50s. Half-plate bellows camera, lens, stand, shutters, numerous sundries, including waterproof case and straps.—3, Martaban Road, Stoke Newington.

Complete whole-plate equipment. Whole-plate camera by Ross, with Ross' R.R. lens, 8½ by 6½, Optimus R.R. lens, 9 by 7, and Dallmeyer's wide-angle R. lens (patent), all three adapted to camera, four double dark slides and two or three double metal slides, tripod, etc., also an Eastman's rollholder with nearly full stop, full-plate size, and fitted to camera, price of all £15, much less than half original cost; a 7 by 5 camera by Trench, Suter's landscape and Steinheil's R.R. lenses, £6.—Apply to F. A., 25, Lansdowne Crescent, Notting Hill.

**Shutter.**—Newman's shutter, 8 by 5 or whole-plate, in case, pneumatic release, two diaphragms, perfect order, 15s.—Field, Montana, Blackheath, S.E.

**Sundries.**—To be sold, price 4 guineas, cost 5, the Incandescent Gas Light Company's apparatus as applied to portraiture, enlarging, etc., or will exchange for good portrait lens.—No. 296, office of this paper, 1, Creed Lane, E.C.

Wanted, photographic offers for good walking-stick telescope and walking-stick gun.—Steel, 74, Goldstone Road, Hove, Sussex.

Bamboo tripod for hand-camera, as new, 4s. 6d. in.



burnisher, good condition, no lamp, 7s. 6d.; cash offers wanted for **AMATEUR PHOTOGRAPHER**, vols. xi. to xiv.; *Photographic Reporter*, Nos. 14 to 32; *Photographic Quarterly*, Nos. 3 to 11; and 12 useful books on photography which cost 20s.—Chas. H. Medlock, 120, West End Lane, West Hampstead.

120 7½ by 4½ transparencies, abbey, rural scenes, seascapes, etc. What offers? List on application.—J. M., 23, Dunollie Road, Kentish Town, London, N.W.

For sale, **AMATEUR PHOTOGRAPHER**, vols. i. to xii., vols. iii., iv., v. bound, rest unbound, also vols. i. to iv. of "Camera," unbound. Offers wanted? Clean.—Cliveden, 120, Hampton Road, Forest Gate.

## WANTED.

**Cameras, etc.**—Wanted, half-plate camera, backs, and stand, cheap.—Warne, 44, Victoria Road, Clapham, S.W.

**Cameras, Lenses, etc.**—Wanted, wet-plate Victoria camera and lenses to take four on a quarter-plate.—F. Young, Draper, Great Yarmouth.

**Enlarging Apparatus.**—Combination Multum-in-Parvo enlarging apparatus, cheap, or good exchange.—Copeman, Henstridge.

**Hand-Cameras, etc.**—Wanted, Rouch's 5 by 4 Eureka hand-camera. Lowest price to No. 297, office of this paper, 1, Creed Lane, E.C.

**Lenses, etc.**—Wanted, quarter or 5 by 4 rapid rectilinear 4½ focus detective lens; lowest price and particulars.—Smith, High Street, Morley.

Wanted, Optimus rapid rectilinear lens; exchange Winchester rifle.—Craven, 33, Fitcham, Lynn.

Wanted, Optimus R.R. lens, 6½ in. focus.—Morse, Chapel Street, Colchester.

Wanted, 7 by 5 Optimus R.R. lens in exchange quarter-plate camera, lens, double dark slide, ash tripod, brass top.—W. A. Tripp, Queen Street, Maidenhead, Berks.

**Sundries.**—Enlarging lantern, 5½ in. condenser, or Lancaster's apparatus, Rubralux lantern, quarter or 5 by 4 R.R. lens by Ross, Wray, or good maker.—Parker, Culmore, Londonderry.

**Bargains in Lenses.**—For sale, 15 by 12 Optimus wide angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; Ross whole-plate actinic triplet, for large heads or groups, Waterhouse stops, take £4 15s.; Dallmeyer rapid landscape lens, quite new, for views, portraits, etc., fine definition, size whole-plate, fitted, rotating guaranteed, 60s., cost £5 15s.; whole-plate Lancaster's Silver Ring rectigraph lens, quite new, grand definition, covers 9 by 7 well, works 7/10, take 60s.; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross's actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; 7 by 5 Optimus rapid rectilinear lens, Waterhouse stops, finest condition, covers well, 37s. 6d. lowest. Portrait lens, cabinet size, rack focussing, finest order, take 17s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, af new, 15s.; quarter-plate portrait lens, by Rooker, o. Newington, rack focus, best order, take 10s. 6d.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse stops, cover 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Photographic Appliances.**—Accessories and apparatus by all the following makers are always in stock; call and inspect any article you may wish to purchase, and compare with different makers' goods, and

you will be able to possess the best and most suitable article for your purpose. Special large selections of Lancaster's goods, all Optimus cameras or lenses, Underwood's cameras, Fallowfield's Hand cameras, Talner Hand cameras, Ideal Hand cameras, etc. All makers' plates, Ilford plates and papers, Paget plates, Thomas's plates, Fry's plates, Mawson's plates, silver papers, bags, cases, valises, 2-fold, 3-fold, and 4-fold stands, dishes, printing frames, etc., etc. Write for list to Manager, City Sale and Exchange, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium).

**Cameras! Cameras! Cameras! Lenses! Lenses! Lenses!** and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Hand Cameras.**—Adams' Ideal hand-camera, fitted Wray's best rapid rectilinear lens, time and instantaneous shutter, carries 12½-plates, two finders, covered morocco leather, as new, take £6 6s.; Optimus Magazine hand-camera, carries 23¼-plates; Optimus Euryscope lens, two finders, best condition, take £5 15s.; Houghton's Automatic hand-camera, 12 quarter-plates in case, rapid rectilinear lens, rotating stops two finders, as new, £4 10s. lowest; London Stereoscopic Company's Despatch detective, covered black leather, fitted Stereoscopic Company's rapid rectilinear lens, Newman's shutter, two finders, three double slides, rack focussing, size quarter-plate, as new, take £6 6s., cost £10 10s.; King's hand-camera, thorough order, carries 12½-plates, fine lens, two finders, take 25s. lowest; Griffiths' hand-camera, quarter-plate, three double slides, finder, good lens and shutter, take 17s., quite new; Stirn's Detective waistcoat camera, silver plated, six views on each plate, quite new, 20s. All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Cameras.**—12 by 10 camera, finest Spanish mahogany, reversing, back leather bellows, double extension, etc., three double slides, fine rapid rectilinear lens, Waterhouse stops, finest definition, and folding stand, take £12 12s., worth double. Whole-plate Optimus Rayment camera, all latest movements, best leather bellows, reversing back, etc., fitted Lancaster's Silver Ring rectigraph lens, iris stops, three double slides, best Spanish mahogany fitted three-fold stand, £9 15s. lowest, cost £14, as new; Lancaster's whole-plate 1891 Instantograph, as new, all improvements, including camera, Instantograph lens, iris stops, instantaneous shutter, double slide, and folding stand, take £5 5s.; stereoscopic camera by Hare, size, 7½ by 5, best leather bellows, double extension, swing-back, rising front, etc., fitted Chadwick's Landscape lenses, rotating stops, Thornton-Pickard time and instantaneous shutter and double slide, lot quite new; a real beauty, take £6 6s., cost £13 13s.; Dallmeyer stereoscopic camera, rack focussing, swing back, three double and one single slides, fitted Ross actinic doublet lens, rotating stops, 5½ in. focus, £7 10s., a rare bargain; Stereoscopic Company's half camera, finest mahogany, leather bellows, reversing, three double slides, Stereoscopic Company's rapid rectilinear lens, Waterhouse stops and folding stand, £4 15s., as new; half-plate camera by Wynne, Holloway, square leather bellows, rising, falling, and cross fronts, three double slides, Wynne rapid rectilinear lens and two fold stand, take £4 17s. 6d., lowest, quite new; Optimus half-plate camera, guaranteed

as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s., worth £5; Lancaster's stereoscopic Instantograph, as new, two double slides, 6½ by 3¼ Instantograph lenses, instantaneous shutter and folding stand, take £3 17s. 6d., quarter-plate Le Meritoire set complete, camera, lens, slide and stand, 21s. lowest; also quarter-plate Instantograph set, as new, including camera, two slides, lens, shutter, folding stand, all latest improvements, 37s. 6d. lowest; above warranted in every detail. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**RILEY BROTHERS**, 5, Cheapside, Bradford, to make room for their constantly increasing Lantern Trade, are selling off and declining the Photographic Outfitting. All their stock can be had at amazingly low prices. Write for lists of Cameras, Plates, Photographic Papers, Dishes, Tripods, Cards, Chemicals, and every requisite. This is a bona-fide sale.

## LESSONS IN PHOTOGRAPHY AND RETOUCHING.

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A few copies of the 1891 volume can be supplied to immediate applicants. 2s. 6d. post free.

**THE OPTICAL LANTERN: for Instruction and Amusement.** By ANDREW FRINGLE, F.M.S. New and cheaper copyright edition. Demy 8vo, half cloth, illustrated. 2s. 6d. Postage 3d.

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# The AMATEUR PHOTOGRAPHER

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Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 401. VOL. XV.]

FRIDAY, JUNE 10, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—Shakespeare.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—Trips on the Thames—City and Guilds Examination—Howard Farmer's Lecture—New Developers.

LEADER.—Notes on Enlarging.

LETTERS.—City and Guilds Examination (Carpenter, Honours Grade)—Photographic Convention (Cembrano)—Stop Thief (Eastman Co.).

ARTICLES.—Photographic Procedure (Wall)—Elementary Photography (Hodges)—The Study and Practice of Art in Field Photography (Horsley Hinton)—A Universal Hand-camera (Bruno)—Metol—Amidol.

CATALOGUES.—W. F. Stanley—R. C. Murray—C. Brumwell—G. Kemp.

APPARATUS.—Beyer's Magazine Hand-camera—Optimus Universal Lens Flange—The "Facilius" Photo Clip—The "Nys" Plate—Adams and Co's Changing Box and Adjustable Shutter.

SOCIETIES' MEETINGS.—Aberdeenshire—Bath—Eastbourne—Haltwhistle—Holborn—South Manchester.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

### TERMS OF SUBSCRIPTION—

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| UNITED KINGDOM.....    | Six Months, 5s. 6d..... | Twelve Months, 10s. 10d. |
| POSTAL UNION .....     | " " 6s. 6d.....         | " " 12s. 0d.             |
| OUT OF POSTAL UNION .. | " " 7s. 9d.....         | " " 15s. 6d.             |

TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE and EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, and VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE and EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

"Amateur Photographer" Monthly Competition No. 37.—"PORTRAITURE AND FIGURE STUDY." Latest day, June 27th.—Prizes: Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, July 15th.)

EVERY year the Thames grows in favour with holiday makers, and it is a well-known and very rich field for amateur photographers. The methods of "doing" the Thames vary somewhat with the ideas of each individual. The rowing man usually hires a boat, in company with some friends, and rows from place to place, doing the eighty-nine miles between Oxford and Kingston in about a week, camping out, perhaps, at night, or else seeking some quiet and not expensive hotel or inn for the night's rest.

To the amateur who is not of a gregarious turn of mind, and who can use a scull or paddle, there is no better method than to hire a canoe or skiff and wander leisurely at his own sweet will. The canoe is to be preferred for the simple reason you can see where you are going to without turning round, and provided a very large and heavy camera is not used it may easily be carried in the canoe. Others again will prefer to tramp it along the towing path, and possibly this is the best method of really doing the river, though, of course, it entails far greater bodily fatigue, and progress is not so rapid as in a boat.

To the amateur who has but little time to spare, the most satisfactory method is to take advantage of the steamboat trips projected by Salter Bros., of Oxford. The launches are handsome, well-appointed boats, and a convenient little dark-room is provided for the use of passengers. For a two days' trip there is nothing better than this, given fine photographic weather. Provided with a hand-camera and a fairly long focus lens charming pictures can be secured at almost every turn. In fact, the difficulty is not to find subjects, but what subjects to miss. On a trip on these launches last year, although the weather was anything but perfect photographically, we managed to expose six dozen plates in the two days, and then missed scores of pictures.

The trip from Oxford to Kingston takes two days, the first being from Oxford to Henley, and the second day from Henley to Kingston. The fare for the two days is 15s., or one may go by train to Oxford and travel down to any particular place, or from place to place, by the launches, which run every day, at proportionate fares. Salter Bros., of Folly Bridge, Oxford, will send full particulars as to the launch trips or the hire of boats, camping-out outfits, etc., on application.

The outfit for the photographer must include a fairly long focus lens, a rapid shutter, and very sensitive plates; the first so as to avoid enormous expanses of water in the foreground, the second for work from the launch deck, or for taking boats going up and down, and the third for the same reason. The finest half of the river is certainly from



Oxford to Maidenhead; the best bit depends somewhat on individual taste, some preferring Whitchurch, Pangbourne, Goring, Mapledurham, etc., and others from Henley to Bray, which includes Marlow, Quarry Woods, Cookham, Cliveden Woods, and Maidenhead. Below Bray is certainly not so good, though, of course pictures may be made anywhere.



WE publish in our correspondence columns a letter from another correspondent on our remarks on the City and Guilds Examination in Photography, and also the letter of the candidate who first complained to us of the way in which the examination was conducted. In our remarks we certainly did not intend to cast any reflection upon Mr. Dollond or any one specially; what we object to is the loose way in which the examination was conducted, and the unfair way of treating the candidates by setting what may almost be called catch questions.



On the 14th inst. Mr. Howard Farmer will read a paper before the P.S.G.B. on "Photo-technical Education at Home and Abroad," in which he will compare the teaching and the results of the teaching in photo-technology, which has been given in England with that given on the Continent. We readily make this statement because it has been previously stated at the society "that there was no place in England where photo instruction could be obtained."



WE publish this week complete notes on two new developing substances, one of which at least has decided claims to novelty, in that it will not act well with alkalis. There are some people who seem to think that photography has had its day, that it is now on the decline, as it is becoming so common and cheap. Possibly this may be, though we do not think so for one moment. We believe that each year will see larger accessions to the ranks of photographers, and that each year will see further advances in the science, not the art, of photography. We use the expression "not the art" because lately we have had a perfect rage for art, and technique and science have gone to the wall, and artists photographers sneer at science which has and is giving them each year great advances, new tools, and improvements.



## NOTES ON ENLARGING.—XIII.

### FAILURES AND THEIR REMEDIES.

In enlarging, as in every other photographic process where success depends upon such a variable quantity as personal skill, care, and judgment, failures are unfortunately too often met with; we shall therefore proceed to consider these in the order of the several operations.

*The enlargement is out of focus, especially at the edges.* This fault is due to non-coincidence of the plane of the sensitive surface with that of the focussing paper or ground glass. This may be remedied by focussing as usual, then placing a piece of orange glass over the lens, fixing the sensitive surface in position, and now examining the focus, and if it appears sharp, exposing and examining the developed print. It may also be caused by the sensitive paper buckling or not lying quite flat, and also by using too large an aperture of the lens. The former may be prevented by straining the paper very tightly, and the latter obviously by the

insertion of a diaphragm. It may also be caused by using too large a flame surface as illuminant.

*The exposure has been over-estimated; in other words, the enlargement is over-exposed.* This is at once recognised by the resulting print being flat, wanting in contrast, or sunken in. The whites even may not be pure, but show signs of reduced silver; the image is also a dull grey, and contains no rich blacks. The obvious remedy is to shorten the exposure, but the over-exposed print may also be improved by a process of intensification.

*The exposure has been under-estimated, or the enlargement is under-exposed.* An under-exposed bromide print is full of extreme contrast, the shadows black and heavy, and the high lights wanting in detail, and showing bare patches of paper. Increasing the exposure is the only remedy, and an under-exposed print had better be consigned to the residue box rather than shown.

*The print is flat, and wanting in contrasts,* and does not even show white paper under the pins or bands which hold it on the easel. This is probably due to stray actinic light. The room in which the enlargement is made, and the lantern, if such be used, should be examined for stray leakage. Such a print may be improved by slightly reducing, washing, thoroughly converting the image into chloride of silver, and redeveloping.

### FAULTS DUE TO THE DEVELOPER.

*The print during development becomes covered with a sandy yellow deposit.* This may be caused, first, by too much acid in the developer; second, by want of acid in the developer; third, by using too much ferrous sulphate; fourth, by using too little oxalate solution. The remedy for the second cause is the addition of some acid to the developer, both to the oxalate and iron solutions. 3. Ferrous oxalate, formed by the addition of ferrous sulphate solution, is soluble only in excess of oxalate of potash; therefore if too much iron solution be added, some of the ferrous oxalate will be precipitated. In such a case pour off the developer, and add more oxalate solution and a grain or two of oxalic acid. 4. If the oxalate solution is allowed to sink to too low a temperature some of the oxalate will crystallise out, and the solution thus be weakened. The remedy is obvious.

*The print during development becomes covered with a white chalky deposit.* This deposit, which is oxalate of lime, is caused by using ordinary tap or hard water for soaking the print or for diluting the developer. The remedy is obviously the use of distilled water. When, however, such a deposit occurs, the only plan is to continue the development till the print is done enough, and then remove the deposit by a weak hydrochloric acid or sulphuric acid bath.

*The print is under-developed.* This is known by the print being full of gradation and detail, but not sufficiently dense or black enough in the shadows. The addition of a little more ferrous sulphate solution and longer development is, of course, the remedy. In the case of a finished print intensification is the only remedy.

*The print is over-developed.* This is known by the print being too dark and heavy. The use of less iron or shortened duration of development, or in the case of a finished print, reducing the same.

### FAULTS DUE TO THE AFTER-OPERATIONS OF CLEARING, FIXING, WASHING, ETC.

*The print is yellow.* This must not be confounded with the yellow deposit of ferrous oxalate, this yellowness being caused, first, by washing the print between development and clearing, or leaving it too long a time before immersing in the clearing bath; second, insufficient acid, or too little



clearing bath; third, insufficient washing between clearing and fixing; fourth, insufficient washing after fixing.

(1) The cause of this yellow stain is the action of the air upon the iron salt, or by the action of the alkaline and earthy salts in common water when the print is washed between development and clearing. The sole action of the clearing solution is to eliminate the soluble iron salt, and prevent the precipitation of any insoluble iron compound.

(2) Insufficient acid or insufficient use of the clearing bath tends to exactly the same result as given under No. 1.

(3) Insufficient washing between clearing and fixing produces not exactly the same kind of yellow stain. With the two former cases the stain is generally more or less defined, and tends to an orange hue, whilst the third fault in manipulation is generally characterised by a faint general yellow or lemon tint all over the print; and it arises, in this case, from the decomposition of the hypo by the acid of the clearing bath, and consequent deposition of sulphur in the film and paper. (4) Insufficient elimination of hypo or imperfect fixation tends to subsequent yellowing of the paper consequent on the decomposition of the hyposulphites of silver. Using a fixing bath too long or too weak also gives rise to the same result, or not allowing the prints to stay sufficiently long in the hypo will also cause the same effect.

The prevention of these faults is obvious. The cure of the same, when existent, depends solely upon the nature of the fault. Thus if the yellow coloration be due to a compound of iron it may frequently be removed by using a bath of—

|                        |           |
|------------------------|-----------|
| Sulphuric acid .. .. . | 25 parts. |
| Water .. .. .          | 500 "     |

or—

|                                 |           |
|---------------------------------|-----------|
| Neutral oxalate of potash .. .. | 25 parts. |
| Oxalic acid .. .. .             | 5 "       |
| Sulphuric acid .. .. .          | 5 "       |
| Distilled water .. .. .         | 500 "     |

The prints should be allowed to soak in either of these baths for about ten minutes, and then thoroughly washed. If the stain is still persistent it may be assumed to be sulphur deposited in the paper. We have found, however, that many a yellow stain on bromide paper will yield to the following treatment, although it may refuse to budge by treatment with either of the above baths. The print is thoroughly well wetted and laid at the bottom of a dish, with just sufficient water to make it adhere flat to the bottom without floating about. The following powder is then sifted over the print; it may also be applied in the form of a paste. When sifted over the wet print it should form a damp, sticky mass; and this may be allowed to remain on the print for half an hour, and then well washed and dried.

|                         |           |
|-------------------------|-----------|
| Salt of sorrel .. .. .  | 15 parts. |
| Cream of tartar .. .. . | 5 "       |

The salt of sorrel is the so-called quadroxalate of potash or acid oxalate.

*Blisters.*—These pests sometimes make their appearance when using bromide paper, usually in the first washing water after fixing, and they may be partially prevented by adding a handful of salt to the first washing water after fixing, or preferably by using the following bath just after clearing.

|                        |           |
|------------------------|-----------|
| Chrome alum .. .. .    | 25 parts. |
| Sulphuric acid .. .. . | 6 "       |
| Water .. .. .          | 250 "     |

It is of course absolutely necessary that the print should be well washed to eliminate the alum, or yellow stains would ensue from the decomposition of the hypo, by the alum and consequent deposition of sulphur.

## Letters to the Editor.

### CITY AND GUILDS EXAMINATION.

SIR,—Permit me to make a few remarks as to your views on the City and Guilds Institute examination in your issue of the 27th ult.

With the examiners' questions we, of course, have nothing to do. In their wisdom they put questions for the purpose of gauging the candidates' knowledge, or want of knowledge, and although the fourth question for the Ordinary Grade may be a difficult one, it is possible the examiners may consider that from the answers given, they can form a better estimate of the candidate's capabilities than if the question were a simple one which could be answered without any hesitation.

Knowing nothing of photo-lithographic work, I can say nothing as to your remarks on the first test of the Honours Grade, but in your remarks as to the third test you have apparently overlooked the word "relative" in the question. Although it may be difficult to test the sensitiveness of two plates under the circumstances you name, you surely cannot contend that there should be any difficulty in ascertaining the "relative sensitiveness"?

It is with the remaining parts of your article I wish more particularly to deal. I was a student of the People's Palace photography class, and certainly cannot endorse your opinion that the arrangements were extremely careless. You object to several competitors being allowed in the dark-room at once. Seeing that at the examination at the People's Palace where nineteen were examined, and where five or six students were allowed in the dark-room at one time, I was kept from three till half-past seven, I leave you to guess how long the examination would have lasted if but one student had been allowed in the dark-room at a time. We were specially told by the examining superintendent that no talking was allowed, and during the whole of the time I was there I can say I saw nothing of any assistance being given either as to exposure or developing, and I believe the whole of the negatives turned out were the sole and unaided work of the students.

Every appliance was ready to our hand, and we had only to ask the examining superintendent if we required any additional apparatus or chemicals to have them at once supplied. The Superintendent was continually in and out of the dark-room, and no doubt saw that no help was given. I only speak as a student, and repeat that I never heard a suggestion of any help being required.

My only complaint was that the regulations did not permit of any refreshments being supplied to students, nor were they allowed to leave the room to obtain some until the examination was concluded. Although this did not seem a hardship to other people, I can assure you it weighed very heavily upon me.

I know nothing of what took place at any of the other centres, but if the arrangements were as satisfactory generally as at the People's Palace, I certainly think your remarks are not altogether just, and shall be glad if you will take an early opportunity of correcting same.

As this is the first practical examination held in photography under the City and Guilds Institute, doubtless improvements will be made in subsequent examinations, but at present they are certainly not altogether in favour of the candidates, as your article implies.

Apologising for troubling you at such length, I am, yours, etc.,  
ARTHUR CARPENTER.

The candidate who gave us some idea as to the manner the examination was conducted, and upon which our notice of the 27th ult. was based, writes:

SIR,—It was not my intention to say anything at present with regard to this examination, and your correspondent "W. F. M." would certainly have evoked no reply to his letter in your last issue from me had he not endeavoured to make a personal matter of the remarks you felt disposed to make upon the subject: "We have been asked, what is the use of this examination? And we cannot say, when conducted in this loose and careless manner." These were your concluding sentences, and the only part "W. F. M." could possibly take exception to. No accusation against any one whose duty it was to attend to the practical part of this examination was made or even hinted; yet "W. F. M." feels so aggrieved as to suggest Mr. Dollond as a medium at which the remarks were levelled—a more ridiculous idea he could scarcely



have penned. In all probability I am more acquainted with Mr. Dollond as a lecturer upon "Photography Procedure" than your correspondent, and any who have had the opportunity—and I may safely say pleasure—to receive theoretical instruction from Mr. Dollond cannot fail to be taken with one of his chief characteristics, viz., courteousness. Neither can anything be said to the contrary as to the very impartial and courteous manner Mr. Gambell conducted the practical section at the Polytechnic, Regent Street, W.

Now if "W. F. M." will take the trouble to seriously reflect for a minute he must agree with me that he has taken an exceedingly narrow view of the whole affair. He said, "The only point upon which I can agree with you is that more than one (in fact, five) developed their plates at a time." This is precisely what should not happen. If the City and Guilds Institute wish to conduct a practical examination they should devise a means whereby candidates work independently of each other, both in exposure and development. Take, for instance, the first question set in the ordinary grade. If a candidate who can think for himself (for I noticed there were many who sat and appeared not to be over-endowed in this respect) so arranged his blinds to produce the effect asked for, all others would follow suit; but I am quite sure there were some who would have used light coming from all conceivable directions and then expect to get the result required, i.e., light to give the greatest relief.

Then, again, "W. F. M." admits there was talking, though "not more than was quite necessary." I should like to know why he considers talking is necessary, since both the technical and practical examinations must be the student's unaided work, when a quiet hint as to exposure or development might materially affect the result? Further, is "W. F. M." capable of forming an adverse opinion to what has been said in relation to the Honours Grade when he sat in the Ordinary? I still contend that to make a negative suitable for photo-lithographic transfers, more especially to secure a negative anything approaching technical excellence, photo-mechanical plates should have been given, or a brand suitable with a very slow emulsion, and not ordinary plates of a make which the majority of photo-mechanical workers would readily condemn as being unfit for the purpose. Another subject given was to test the relative sensitiveness of two given plates, and send plates after trial, with an explanation as to how the result was arrived at. Is this a practical question, since notes and instruments were forbidden? I think it would tax the ability of better men than those sitting this year to arrive at anything like a reliable conclusion without a graduated screen or a Spurge's sensitometer; therefore this question may be classed for what it is worth with the question of ascertaining when a silver print may be considered to be completely fixed.

In conclusion, I should like to draw attention to the nature of the syllabus issued by the City and Guilds Institute. "In the Honours Grade questions will be given in the Ordinary Grade, but more difficult, and in addition photogravure, photo-half-tone, photo-enamels, zincography, woodburytype, collotype, lithographic transfers, optics, and theory of development." By referring to the examination questions, it will be noticed that not one of the subjects was taken, and I must confess I fail to see the utility of sending out such a stupendous compendium and then totally ignoring it at the examination; but perhaps I may be incapable of penetrating the depth of thought of those responsible for the setting and arranging of the first technological and practical examination.—Yours, etc., HONOURS GRADE.

\* \* \* \*

#### THE PHOTOGRAPHIC CONVENTION OF THE UNITED KINGDOM.

SIR,—I have the pleasure to enclose a further list of papers to be read at this year's meeting of the Convention at Edinburgh, which I hope you will publish for the convenience of those of your readers who are members:—"The Art of Photography in relation to Painting," by Mr. A. Burchett; "Direct Silhouette Portraiture" (with lantern illustrations), by Mr. J. Cox; "On the Training of Photographers," by Mr. E. Howard Farmer; "The Use of the Colour Screen in Landscape Photography," by Mr. Chas. L. Mitchell, M.A.

Professor W. K. Burton and Mr. F. M. Sutcliffe have also promised contributions, but the titles of their papers are not yet to hand.—Yours, etc., F. P. CEMBRANO, JR.

June 2nd, 1892.

#### STOP THIEF!

SIR,—We should esteem it a favour if you would kindly, in the columns of your journal, circulate the information that a No. 4 Regular Kodak, numbered 7806, was, on the 31st May, 1892, stolen from the counter in our shop. We ask your assistance, in the hope that the camera may be offered to one of your readers, who will, we know, be willing to help us in the detection of the thief.—Yours truly,

THE EASTMAN PHOTOGRAPHIC MATERIALS CO., LD.  
115, Oxford Street, W.



## Photographic Procedure.

BY E. J. WALL,

Author of the "Dictionary of Photography."

### SECTION V.

#### THE SENSITIVE MEDIUM AND ITS SUPPORT.

(Continued from page 433.)

It is a matter of regret that we have no satisfactory method of testing the sensitiveness of plates. A brief review of the methods which are or have been used may be of service.

*Warnerke's Sensitometer.*—This instrument was introduced by Leon Warnerke in 1880, and improved in 1881. It is the instrument generally in use, and is really very unreliable, and it is a matter of congratulation that several plate-makers are now discarding this instrument altogether. It is no uncommon experience to find that a plate which shows only twenty on the sensitometer is faster in the camera than one showing twenty-two in the sensitometer.

The sensitometer itself takes the form of a quarter-plate printing frame with a sliding door, on one side of which is a numbered tablet, and on the other a phosphorescent tablet, formed by painting glass with a sulphide of calcium or luminous paint.

The numbered tablet is prepared by means of the Woodburytype process, a gelatine ink with black pigment forming squares of varying thickness. The full description of the process of manufacture of this is given in the *Photographic News*, 1881, p. 75, and *British Journal of Photography*, 1881, p. 13. With the details of construction we need hardly concern ourselves; it is sufficient for our purpose that we have a printing frame with a numbered tablet, in contact with which is placed a plate to be tested. The sliding shutter is closed. The phosphorescent tablet, which serves as a standard light, is turned back and in. =  $2\frac{1}{2}$  centimetres of magnesium ribbon is burnt as near as possible to the phosphorescent surface. The tablet will now be seen to glow with a vivid violet light, and it is allowed to rest for one minute after the extinction of the magnesium, and then the tablet being fastened down, the sliding door is withdrawn and the plate exposed to this light, which shines through the numbered tablet for 30 sec.; the sliding door is now closed and the sensitive plate removed and developed, the duration of development being the same as for a plate normally exposed in the camera. After fixing and washing, the plate should be held at arm's length against a white surface, and the highest number which it is possible to read is said to represent the rapidity of the plate.

Let us now see the objections to the use of this instrument. In treating of the question of phosphorescent exposure meters or photometers, we saw that the light emitted by the luminous or excited sulphide of calcium was practically confined to one particular region of the



spectrum; now, in actual exposures in the camera we have to deal with light of every wave length. Secondly, we saw that the intensity of the luminescence varied with the duration of burning of the exciting medium, but it may be contended that we have in this case a constant light, viz., a given quantity of magnesium ribbon, but there is not specified that the ribbon shall weigh a given amount, and even if all magnesium ribbon was equal in weight, which is not the case, I have it on the authority of Mr. W. J. Dibdin, F.I.C., F.C.S., one of the committee on the question of a standard Board of Trade unit light, and a gentleman of considerable experience in photometry, that magnesium ribbon will even vary as much as 10 to 15 per cent. in photometric power. Then again, Vogel and Stolze have pointed out that it is not within the realms of possibility to prepare by means of the Woodbury process a series of number tablets all of the same opacity and perfectly regular. As an example of this, Dr. Eder ("Photographie mit Bromsilber," page 139) says, "Es kam ein Fall vor, dass ein von Marion aus London bezogenes instrument eine differenz von 5 Grad gegenüber anderen Vergleichsinstrumenten zeigte," or, as we should say, an instance occurred in which an instrument obtained from Marion's, of London, showed a difference of 5 degs. when compared with other instruments. I also have one which showed 22 degs. when another belonging to a large firm of plate makers showed 24 degs. on the halves of the same half-plate. If this be the case, the instrument is certainly not trustworthy, and we need hardly enter more fully into the objections, but there is yet one argument which has been advanced which we may briefly consider. The argument is that if one and the same sensitometer be always used for one manufacturer's plates, which are always made by one particular method, then it becomes of value. I admit that the results may be of use to the manufacturer, but as it is usual to issue commercial plates with the sensitometer number attached, and as the users of the plates are in the habit of reckoning exposures with different makers' plates by the sensitometer numbers, it is obvious that we again get another source of error.

I am glad to note that Messrs. Marion and Co., who were the sole makers of Warnerke's sensitometer, have now discontinued using it to record the sensitiveness.

As, however, these numbers are still likely to be used for some time, I give Eder's table of the comparative sensitiveness as compared to wet collodion, a very incorrect standard:—

| Sensitometer Number. | Sensitiveness.                         |
|----------------------|----------------------------------------|
| 10 ... ..            | = 1, wet collodion.                    |
| 11 ... ..            | = $1\frac{1}{3}$ times more sensitive. |
| 12 ... ..            | = $1\frac{3}{4}$ " "                   |
| 13 ... ..            | = $2\frac{1}{3}$ " "                   |
| 14 ... ..            | = 3 " "                                |
| 15 ... ..            | = 4 " "                                |
| 16 ... ..            | = 5 " "                                |
| 17 ... ..            | = 7 " "                                |
| 18 ... ..            | = 9 " "                                |
| 19 ... ..            | = 12 " "                               |
| 20 ... ..            | = 16 " "                               |
| 21 ... ..            | = 21 " "                               |
| 22 ... ..            | = 27 " "                               |
| 23 ... ..            | = 36 " "                               |
| 24 ... ..            | = 48 " "                               |
| 25 ... ..            | = 63 " "                               |

Cadett has also compiled the following table, showing the relative sensitiveness of any two plates:—

NUMBER OF TIMES MORE SENSITIVE THAN

|    | 25 | 24             | 23             | 22             | 21             | 20             | 19             | 18             | 17             | 16             | 15             | B |
|----|----|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---|
| 25 | 1  | $1\frac{1}{3}$ | $1\frac{3}{4}$ | $2\frac{1}{3}$ | 3              | 4              | 5              | 7              | 9              | 12             | 16             |   |
| 24 | —  | 1              | $1\frac{1}{3}$ | $1\frac{3}{4}$ | $2\frac{1}{3}$ | 3              | 4              | 5              | 7              | 9              | 12             |   |
| 23 | —  | —              | 1              | $1\frac{1}{3}$ | $1\frac{3}{4}$ | $2\frac{1}{3}$ | 3              | 4              | 5              | 7              | 9              |   |
| 22 | —  | —              | —              | 1              | $1\frac{1}{3}$ | $1\frac{3}{4}$ | $2\frac{1}{3}$ | 3              | 4              | 5              | 7              |   |
| 21 | —  | —              | —              | —              | 1              | $1\frac{1}{3}$ | $1\frac{3}{4}$ | $2\frac{1}{3}$ | 3              | 4              | 5              |   |
| 20 | —  | —              | —              | —              | —              | 1              | $1\frac{1}{3}$ | $1\frac{3}{4}$ | $2\frac{1}{3}$ | 3              | 4              |   |
| 19 | —  | —              | —              | —              | —              | —              | 1              | $1\frac{1}{3}$ | $1\frac{3}{4}$ | $2\frac{1}{3}$ | 3              |   |
| 18 | —  | —              | —              | —              | —              | —              | —              | 1              | $1\frac{1}{3}$ | $1\frac{3}{4}$ | $2\frac{1}{3}$ |   |
| 17 | —  | —              | —              | —              | —              | —              | —              | —              | 1              | $1\frac{1}{3}$ | $1\frac{3}{4}$ |   |
| 16 | —  | —              | —              | —              | —              | —              | —              | —              | —              | 1              | $1\frac{1}{3}$ |   |
| 15 | —  | —              | —              | —              | —              | —              | —              | —              | —              | —              | 1              |   |
| A  |    |                |                |                |                |                |                |                |                |                |                |   |

To use this table to compare the rapidity of two plates, the sensitometer numbers of which are known, run the eye up the column A till the sensitometer number 1 is reached, and then along the line of figures till it reaches the column of figures under the sensitometer number of the second plate, when the figure there shown will tell at once the difference in rapidity. Example: A plate has been used of ordinary rapidity showing 18 on sensitometer, and it is desired to use a plate of sensitometer No 22. Find 22 in column A, and carry the eye along the line of figures till it meets the column under 18 in B line—the number 3 will be found; therefore, the 22 plate is three times as sensitive as No. 18, and therefore will require one-third the exposure.

(To be continued.)

## Elementary Photography.

BY JOHN A. HODGES.

### CHAPTER XIX.

#### MAKING LANTERN SLIDES.

A Retrospect—Commercial Lantern Plates—Quality—Alternative Methods—Contact Printing—Chloride Plates—Procedure—Exposure by Magnesium—Development with Ferrous Oxalate—Cleanliness—The Attributes of a good Slide—Fixing—A fresh Fixing Bath essential—Drying—Mounting—Binding and Finishing—Concluding Words.

WHEN I first commenced the practice of photography the number of amateurs who made their own lantern slides might be counted upon the fingers of one hand. Since then photographic operations have been almost revolutionised, and, owing to the substitution of gelatine for collodion, and the introduction of commercial dry plates specially prepared for the purpose, nearly every amateur photographer nowadays tries to make his own lantern slides. Nor can anything be said against the practice, for although at first the results may not be equal to those produced by professional slide-makers, yet the very fact of their being the worker's own production at once gives them a value which the best commercial slides would necessarily lack.

English lantern slides measure  $3\frac{1}{4}$  by  $3\frac{1}{4}$  inches, and plates of that size, coated with emulsions prepared specially for transparency work, can be obtained from any dealer; nearly all the well-known plate makers also make and sell lantern plates. I cannot undertake to recommend particular brands; I have used, at one time and another, every known make, and the general quality is so good that I believe it is



possible to obtain, with a little practice, equally good results upon any of them. The beginner should select one particular make, and stick to it until he is able to produce a passable slide.

There are two ways of making lantern slides, namely, by contact printing, and by reducing in the camera. I shall, however, here only deal with the former method of working.

There are two kinds of lantern plates made, some being coated with bromide of silver emulsion, and others with chloride of silver emulsion. The former are considerably quicker than the latter, but for contact printing this is no particular advantage, and therefore I recommend the novice to make his first experiments in lantern slide making on chloride plates. A box of these, therefore, should be procured. The plates being very slow, are not nearly so easily affected by exposure to light, therefore plenty of illumination can be used; indeed, the one thickness of the yellow fabric recommended for bromide printing will be found to afford a perfectly safe light. Upon opening the packet the novice will probably have some difficulty in determining which is the coated side of the glass, the emulsion being of an exceedingly transparent character. If, however, the finger nail be cautiously rubbed on the extreme corner of the plate, the coated side will be detected immediately, or the tip of the finger may be moistened, when the tacky nature of the gelatinous surface will be at once revealed. The negative from which the slide is to be made is placed in an ordinary printing frame, and one of the lantern plates carefully superimposed, and the back of the frame closed. This leads one to refer to the single disadvantage of making lantern slides by contact, namely, that if the negatives be of larger dimensions than the slide, the whole of the composition cannot be included. It is better, therefore, when the negatives are produced with the special object of obtaining from them lantern slides by contact, to make them on quarter-plates. At the same time, it is often possible to pick out portions of larger negatives which will give good results. Care must be taken, however, when the negative is larger than the slide, in placing the lantern plate in position, to avoid scratching the surface of the negative.

We now come to the question of exposure, and for this particular work artificial light has many advantages. The source of light may be a gas or lamp flame, but magnesium ribbon will be better than either. By observing the precautions recommended for securing uniformity in results laid down in the chapter upon bromide printing, as to keeping the source of light at a fixed distance from the printing frame, uniform results upon chloride plates can be easily secured. When the correct exposure for a particular negative has been ascertained a note of it should be kept. As the plates of different manufacturers necessarily vary somewhat in rapidity, it is useless to specify any particular exposure, but as a rough guide about 3 inches of magnesium ribbon, burnt at a distance of 15 inches from the negative, should give, with a negative of good printing quality, a proper exposed slide; dense negatives of course will require more, and thin ones, less exposure. The strip of magnesium ribbon, it is, perhaps, unnecessary to say, should not be held in the fingers, but nipped with a pair of ordinary pliers; the quantity used should be measured and not guessed.

Either ferrous-oxalate or hydroquinone development may be used, but I decidedly prefer the former for developing chloride plates. But whichever is employed some modification of the original formula will be necessary, as the solutions used for developing negatives will prove far too strong for developing chloride lantern plates.

To make the developer, place in a clean developing cup,

|                  |    |    |    |           |
|------------------|----|----|----|-----------|
| Oxalate solution | .. | .. | .. | 4 parts.  |
| Iron solution    | .. | .. | .. | 1 part.   |
| Water, distilled | .. | .. | .. | 12 parts. |

In using this developer the greatest care must be taken to avoid the slightest contamination with hypo or pyro, which would be fatal to good results. If the exposure has been correct, the picture will soon begin to appear, and will gain rapidly in strength and detail. The plate must be removed from the developer as soon as the picture is fully out, as the image will continue to gain in density even after it has been placed in the washing water. Density is ascertained by removing the plate from the dish and holding it up to the light of the lamp. At the close of development the high lights, represented by the white portions of the picture, should remain clear; if they become discoloured, the exposure has been excessive, or development has been carried too far. In either case the slide should be rejected, as it is of the utmost importance that the high lights of a lantern slide should be transparent and free from the slightest veiling or discolouration. After about five minutes' washing in running water, the plate should be transferred to a freshly-made fixing bath of ordinary strength. These plates fix very quickly, but they should be allowed to remain in the bath for about ten minutes, after which they must be washed in running water for two hours. They may then be removed and put on end against a wall in a place free from dust until they are thoroughly dry.

The slides will then be ready for mounting. Some narrow strips of ready-gummed paper, called in technical language "binding strips," should be purchased from a dealer, together with some cover glasses, which are simply plain pieces of glass the size of a lantern plate. Some "masks," as the discs of opaque paper  $3\frac{1}{4}$  by  $3\frac{1}{4}$  square with various sized openings punched in them are called, will also be required. The size and shape of the opening chosen for any particular slide must be left to the taste and judgment of the reader, but as a general rule oblong openings will be found to yield the most artistic results, and circles should whenever possible be avoided.

To mount the slide, a suitable mask is taken and laid upon the face of the slide, a clean cover-glass is then superimposed, so that the film of the slide is entirely protected from any injury, short of actual fracture. A strip of the gummed binding paper is cut into  $3\frac{1}{4}$  inch lengths and moistened. On one of these moistened strips the slide with its covering glass is pressed; it will adhere, and the sides should then be quickly and neatly pressed to the glass. The operation is repeated with the remaining three sides, when the slide will be complete. In order that a lantern slide may appear correctly on the screen, it is necessary to place it in the lantern *upside down*, and with the *film-side of the slide towards the condenser*, and so that mistakes in this respect may not occur, it is usual to place some distinguishing mark upon the slide. This usually takes the form of two discs of paper, which should be gummed to the top corners of the slide, when it is held up to the light, and the view appears in its proper position to the observer. In exhibiting, the slides are always inserted in the lantern with these dots down and towards the condenser.

To properly treat the subject of lantern slides it would be necessary to go into far greater detail than would be permissible in these pages, therefore I have contented myself with describing the simplest method of producing them, and the easiest process by which they may be produced. Having succeeded in producing successful results by the simple process described, the worker can try his hand at the reduction method, and can experiment with different makes of plates.



## Metol.

### A NEW DEVELOPER.

DR. J. M. EDER, Director der K.K. Lehr und Versuchsanstalt für Photographie und Reproduktionsverfahren of Vienna, publishes in the current number of the *Photographische Correspondenz* the following report on this new agent.

According to the statements of the manufacturers, "Metol" is a salt of mono-methyl-para-amido-meta-cresol.\*

Metol is a whitish powder soluble in water, which forms, in aqueous solution in the presence of sodium sulphite or other alkaline sulphites, an almost colourless liquid, which keeps for many weeks in closed vessels without undergoing decomposition.

This solution remains colourless in the presence of alkaline carbonates, and acts as an energetic, clean, and quick working excellent developer for gelatino-bromide of silver plates, and weaker also for chloride and chloro-bromide plates.†

The employment of this for bromide plates was specially considered, and the following developer formulæ are suggested as suitable:—

#### 1.—METOL POTASH DEVELOPER.

##### A.

|                               |             |
|-------------------------------|-------------|
| Distilled water .. ..         | 1000 parts. |
| Neutral sodium sulphite .. .. | 100 "       |
| Metol .. ..                   | 10 "        |

##### B.

|                           |             |
|---------------------------|-------------|
| Distilled water .. ..     | 1000 parts. |
| Carbonate of potash .. .. | 100 "       |

For use, mix

|                      |           |
|----------------------|-----------|
| Metol solution .. .. | 60 parts. |
| Potash .. ..         | 20 "      |

This developer can be used immediately, but will also keep perfectly good for a week in a closed bottle.

The image appears almost instantly with this developer with normally exposed plates. It appears at first thin and grey, but gains continuously in vigour, and the development is complete in about two to three minutes.

Even with more protracted development the negatives show no tendency to hardness. As the density of the images is lost somewhat in fixing, they must be developed somewhat more dense than they should appear after fixing. By varying the proportions of metol and potash solutions it is very easy to prepare developers of various qualities, which can be adapted to the different commercial bromide plates, answering also to any requirements of the operator.

For slower development, if very soft pictures are desired, mixtures of the said solutions are to be recommended, which contain more water and less potash, e.g.:—

|                      |           |
|----------------------|-----------|
| Metol solution .. .. | 60 parts. |
| Potash " .. ..       | 10 "      |
| Water .. ..          | 20 "      |

On the other hand, if the proportion of potash is increased, the development is accelerated and the high lights of the picture quickly gain a dense deposit.

If any plates or films should be met with which acquire the necessary density too slowly, one can use as a developer:—

|                      |            |
|----------------------|------------|
| Metol solution .. .. | 60 parts.  |
| Potash " .. ..       | 30 to 40 " |

The metol developer only loses slightly in activity by developing several plates in the same liquid, and turns brown only very gradually; naturally, the old metol developer acts less energetically, and is thus, therefore, suitable for developing over-exposed plates.

The sensitometer sensitiveness which this developer shows was with six commercial brands of dry plates equal to that of pyrogallol, eikonogen, hydrokinone, and paramidophenol. It is characteristic of this that with sensitive plates the first 15 to 20 numbers appeared almost simultaneously at the commencement of developing.

With instantaneous exposures and exposures in the studio metol permits of a shorter exposure than pyrogallol for instance,

\* The chemical formula of cresol is  $C_6H_4CH_3OH$ ; amido-cresol has the formula  $C_6H_3CH_3OHNH_2$ , and is closely allied to amido-phenol  $C_6H_4NH_2OH$ . Mono-methyl-para-amido-meta-cresol has the formula  $C_6H_3CH_3OHNH_2CH_3$ , and "Metol" is the sulphate or the similar acting hydrochlorate or oxalate of this compound.

† Mixtures of metol and sulphite give, even without alkaline carbonates, a developer for chloride and chloro-bromide plates.

since the details in the shadows and in the high lights very soon after the commencement of development make their appearance, and one can develop the plates without fearing hardness.

A 10 per cent. solution of bromide of potassium acts as a restrainer without in small quantities causing hardness.

By the addition of larger quantities of bromide of potassium one can counteract the effects of considerable over-exposure.

On the basis of these statements, the developer can be easily modified and be adapted to the exposure. The colour of the image is greyish black, and the gelatine itself does not become stained yellow at all by metol developer even when a neutral fixing bath is used.

Obviously it is not difficult to prepare ready mixed concentrated metol potash developers, by means of metol, potash, and sodium or potassium sulphite.

A great advantage of metol is that by the suggested methods very clean working developers can be prepared with the aid of the alkaline carbonates, the action of which is easily controlled; by this means the employment of caustic alkalis is avoided, which, as is well known, have many inconveniences.

#### METOL SODA DEVELOPER.

Very beautifully a mixture of metol, sodium sulphite and carbonate of soda also acts.

This developer acts somewhat slower than the metol potash developer; it is suitable also, however, for developing portraits, instantaneous and landscape exposures.

A good, energetic, clean working metol soda developer is obtainable in the following way:—

##### A.

|                                 |             |
|---------------------------------|-------------|
| Distilled water .. ..           | 1,000 parts |
| Sodium sulphite (crystal) .. .. | 100 "       |
| Metol .. ..                     | 10 "        |

##### B.

|                                        |             |
|----------------------------------------|-------------|
| Distilled water .. ..                  | 1,000 parts |
| Carbonate of soda (pure crystal) .. .. | 100 "       |

For use mix in equal parts.

The developer behaves as regards keeping power and colour similar to the potash developer.

If the developer is required to work softer, the mixture should be diluted with about half its volume of water, or one part of metol solution should be mixed with  $\frac{1}{2}$  to  $\frac{1}{3}$  of solution of soda. This developer will also keep very well.

## Catalogues.

W. F. STANLEY, 13, Railway Approach, London Bridge.

A well compiled and illustrated price list of all photographic appliances, and the special cameras and apparatus manufactured at the works at South Norwood.

ROBERT C. MURRAY, 8, Garrick Street, Covent Garden, W.C.

This contains all the leading lines, including the Nys dry plates for which Mr. Murray is agent, or offers for sale.

"A Short and Easy Road to Photography," by Charles W. Brumwell, 7, Lower Terrace, Notting Hill, London, W. Price 2d.

Brief directions as to the actually necessary points to be observed for turning out a finished print precede a price list of the usual goods.

GEO. KEMP, 59, Bridge Street, Chester.

To all visitors to this old-world town of Chester, Mr. Kemp's price list will be found useful, and a convenient dark-room is also provided for the use of customers.

**Bournemouth.**—The first photographic excursion of the season took place on the 28th ult. The spot selected was Blackwater Ferry, near Christchurch. The party proceeded by brake to the Ferry, cameras were soon unpacked, and a number of pretty views taken. The members then made their way through the fields to the village of Holdenhurst, where several views of quaint old cottages and farm-yard scenes were secured. About forty plates were exposed during the afternoon; after a walk of about a mile, the brake was picked up again at Iford Bridge, and the party returned to Bournemouth, after a most enjoyable outing, all expressing great satisfaction at the agreeable afternoon spent. Several attractive excursions are being arranged by the committee for the coming season.



## The Study and Practice of Art in Field Photography.

BY A. HORSLEY HINTON.

### CHAPTER VIII.

#### ON THE TREATMENT OF TREES IN LANDSCAPE.

AND now as regards trees. As a means of expression, in nine landscapes out of ten, how important, and yet how seldom understood, how rarely correctly rendered or their full beauty even suggested! The treatment and best aspects of each individual tree and each species might form a chapter in itself, so that in the present section of our series we can only hope to point out some of the most conspicuous errors commonly exhibited, and suggest some directions in which improvement might be made.

Here for the first time in our talks about field photography we brought involuntarily to speak of the question of focussing, and although we would fain avoid a topic upon which there has been recently so much controversy, yet in the photographic treatment of trees in landscape we cannot

conscientiously disregard the serious consequence of an unwise use of the lens power in representing trees either in foliage or in their phase of winter leaflessness.

In the first place, then, let us remember that a tree in a landscape subject is to be regarded as a tree and not as a phenomenal development of plant life; the mass of foliage is of importance in your picture as a whole, and not as an accumulation of tiny leaves and branches. The elm no longer conveys a sense of its stateliness, or the oak its might and grandeur, if we set ourselves to examine the minutiae of its component parts; regarded as an optical question alone, it is an abnormal vision that can discern and separate the leaves on the tree at a very little distance, or the blades of grass in a given square yard of meadow land.

This being the case, it is necessary for the photographer to regard his trees accordingly. If it be desired that the beholder identify the *kind* of tree—ash or oak, willow or linden (why is it, by the way, that our simple names of

trees are so largely soft liquid sounds? But the photographer has little to do with and may resent the digression)—if, then, we say it is necessary for the spectator to be able to state what kind of tree is represented, this should be, and in most cases is, sufficiently conveyed by the general configuration of the tree, and is hardly better done by the exact delineation of the leaves on every spray. Moreover, the beauty of the tree in full summer foliage consists in the contrasting masses of light and shade as the light falls on or passes over each protruding and receding limb; or in winter barrenness it is not the delicate vein-like tracery of each dividing branch, but the graceful ramifications of the chief branches, which as they subdivide in their extremities give a general outline to the tree form, which in reality has no outline. Hence we say, without prejudice or bias, that in almost every position our trees in landscape are best generalised, in just that manner

obtained by letting them come in the plane of the lens which is not most sharply focussed.

Then come the questions of position and colour or tone. Generally speaking, it is not sufficient that a solitary tree or even a group of trees, form in itself the whole of the picture—that is, of course, supposing a picture and artistic



representation of nature be the intention, and on this supposition we have all along written. "A Study of an Oak" or "Burnham Beeches" are likely enough subjects, but it should be observed that in either case the purpose of the photographer is betrayed at once. It has been to produce an accurate representation of the particular object or scene from, perhaps, the most pleasing point of view; but, no matter how much judgment has been exercised in choosing the aspect or conditions of light, it is hard in the resulting plate to escape from the purely topographical and the mere record of physical fact. It may be we get a forest scene chiefly characterised by the giant trunks and far-spreading lower branches of ancient beech trees; here and there strange tortuous forms of roots protrude from and disappear beneath the soft earth, like some old-world Saurians wallowing in their oozy mud; and when all this is done, what is the remark which is so often first prompted? "How like such and such a glade—like Burnham, or Epping." It is the singularity, the unique and phenomenal



character, which has usually determined the photographer to secure such representation, and hence the spectator remarks the curious growth of the trees rather than the sentiment of silence and cool shade of the forest seclusion.

This will also be felt to be the case when a solitary tree monopolises the greater part of the space on our plate in landscape scenes of a different character, and whatever poetry may be in the picture is overwhelmed by the attention which will be drawn to the fine development, the strange form or symmetrical proportions, as the case may be. We are inclined to assert that, beautiful as trees may be as objects for contemplation, yet the strength of their beauty to the artist depends upon the surroundings and adjacent circumstances quite as much as upon their individual features.

Our trees in landscape subjects should therefore be admitted into the field of the lens, should be so placed in our scene, only as to help the entire composition, perhaps because they afford an opportunity of giving contrast, or because their fine lights and shadows so well suggest sunshine, in neither of which cases are they sought for their own intrinsic specific interest.

We have suggested that the beauty of trees is dependent upon the environment. Following this line of thought, we should find that an essential accompaniment of trees in nature is the surrounding sky and air, and even though when looking at a scene the trees are too near or too tall for us to include their entire figure at one glance, yet we are all the time mentally conscious that the tree tops are there above us, and we know that a very slight alteration in the direction of our gaze would enable us to see the higher branches mapped out against the sky behind. We are not conscious of restriction.

In too many cases, however, in our photographs, should the whole of the trees be not included in the field of the lens, we are presented with an unpleasant cut-off effect, and the edges of our pictures appear to arbitrarily circumscribe the scene. The spectator feels more as though looking through a window instead of being out-of-doors. Hence we would propose that it is advisable to so arrange the subject that the *whole* of such trees as are introduced should be included in the picture, and this too not only for the reasons above suggested, but also because the tree too large to be wholly included will be probably a *near* tree, and if so, notwithstanding the utmost care in using suitable plate, exposure, and development, near foliage or branches will so

often in photography be in false relation and tone, and come out much more dark and solid than the impression which the eye receives from nature. We should thus get a deep, heavy mass coming up to the upper or side limits of the picture, which, by reason of the strong contrast thus made, arrests the eye and overwhelms the interest of any other portion in the composition, afflicting the eye with just that circumscribed and confined sense which we should most strive to avert.

Of course, there are notable exceptions to the above, and conditions under which it is inevitable to include only a limited portion of the trees, but the conditions must be properly understood, and the whole composition approached with greatest care and judgment. Such exceptional conditions would be when an absorbing and complete local attraction in perhaps the foreground of the picture, as may sometimes be had in near figures, boats, a bridge, or even by very striking combinations of such material as

rushes, or flowers, or rocks, and water, yet, even then, rippled water gliding beneath the arched stems of tall water-plants eddying and gleaming in rocky shallows, and tufts of bright blossoms contrasting with the dark foliage which embowers the whole, is somehow, to us at least, more the place for



the poet to find sweet solitude, or, perhaps, for the painter than for the photographer, fettered as he is at present by some of the limitations to which he must confess. For the photographer these shady nooks, by river banks or under tall hedgerows, are rarely satisfactory. They are, apart from the "shut-in" impression above alluded to, fraught with technical difficulties.

Light, atmosphere, and distance may all be well suggested by photography, and hence there is probably a more prosperous, a more inviting field open for us in the open landscape.

We have endeavoured to convey our meaning more directly by the accompanying sketches. In the first of these the eye, although naturally led to the central objects in the composition, yet feels the upper boundary of the picture as oppressive. This feeling would not be present in such an arrangement as the second sketch.

When a tree forms a prominent object, the desirability of the margin of the picture including it rather than bisecting it is again often felt when in such localities as wooded commons, and the outskirts of forest and river-side subjects, only in such cases it is the side margin of the picture which



will sometimes cut off part of the tree instead of the upper one. Thus we find a pleasant distance and foreground immediately contiguous to tall trees, and in order to introduce some bold, important feature into the picture, the general tendency is to get some portion of the trees on one side, which, however, being too large or because we are over-anxious to get as much of the distance in as possible, results in a heavy mass of foliage coming up to the side edge, and we get the same feeling as when our picture margin cut off the tops of trees before referred to. Depend upon it, it would be better to get the trees quite out of the field of the lens and content ourselves with the distance and flat country alone, or else to sacrifice this and confine our attention to the trees only. It is not a question of balance, of having a conspicuous object on one side with nothing to compensate it on the other; it is far more the making of the limits of the picture to be felt and their becoming in consequence irksome. Perhaps, in order to avoid this, we introduce a figure or some cattle in such a position as to draw the interest away from the side where the trees are, and in so doing apply the rules of balance, which we have somewhere read to be so important in all pictorial compositions. We would, however, caution our readers against any such method of escaping the difficulty, because a so distinctly and conventional practice is more often productive of harm than good, and if the necessity for balance be so strongly and irresistibly felt in the subject as to make the adoption of these means inevitable, it is only with the most consummate skill, if at all, that we can hope to be successful, and a safer plan is to leave the subject alone and pass it by either as one unsuitable for the camera, or as requiring further consideration at a more leisure hour. We hope to have something to say upon the so-called rule of balance hereafter, and have only referred to it here because we would have our readers beware of relying upon it to convert a bad or impossible subject into a good one.

There should be no lack of subjects and material if well sought after. Nature has enough for us and to spare in every half mile of country, so that we need hardly regret having to pass this or that group of trees because they do not lend themselves to our requirements.

In association with the above remarks we have not thought it necessary to say anything about the use of a wide-angle lens, in order to include the whole of an object that is otherwise too large. It is so generally known and admitted that the advantages of the shorter focus lens are in artistic work so more than compromised by its faults that we have considered reference to its functions needless.

Speaking generally, from memory, of a great many open country scenes, that is, flat, marshy, or pastoral scenery, wherein trees are the largest things and are not dwarfed in effect by the greater altitude and bulk of hills, mountains, and rocks, we have a feeling that it is usually advisable to let the trees be either of primary importance or entirely subordinate.

That is to say, if the particular group of trees be of itself sufficiently picturesque then let the trees themselves be the *raison d'être* of the picture, with just sufficient sky and foreground to suggest that they are not cut out from all the environment for our special benefit, but only one pleasant spot of all the many pleasing things which that meadow, or marsh, or green lane contained. Even then the grassy, rushy, broken levels that lead us along from the tall thistles or docks at our feet right up to where the great roots of the trees protrude from the earth, and make deep lines of shadow round their base—even then this foreground may form the chief interest, yet it will be well for the trees to be of such a size as to render their presence

plainly felt and we shall thus often escape insignificance and pettiness.

In the alternative when the trees in our landscape are merely incidental, when the chief interest is in something else, then the trees will be better if unobtrusive, just suggestive in the distance of a different scene away outside the present associations.

We have already remarked upon the difficulty of rendering trees in summer foliage in correct relation as regards colour or tone, how the rich greens are too often only labelled by the representations in heavy blacks. The use of Isochromatic plates, and the careful attention to the most favourable lighting may lessen this to a great degree, but by no means removes the difficulty. Again, if a mass of trees in full-leaf become so merged one with another, that we get only an unbroken bank of dark which when seen in monochrome in the photograph loses nearly all beauty, and appears only as a solid barrier across the picture, or even if the trees be comparatively near and separated, so that we can appreciate something of their form, usually there is an unfortunate proneness to solidity and heaviness that is hard to overcome, so that the artist and photographer who has observed and profited by former experience knows that his admiration for all the beauty of the piled-up leafy structure must not influence him too much.

In autumn, in winter, in early spring, when the leaves are thin or are absent, the opportunity will be better, and then between the naked branches we shall get a glimpse of cottage gable beyond, so that in most cases, though we love the trees for their leafy beauty, and the wondrous rustling music up there where the breezes are sporting round the swaying branches and dark recesses, yet we love to portray them in their less playful mood when the summer drapery is cast aside, and the poetry of their hidden form—gaunt and rugged, or delicately light, as the case may be—is half revealed.

And yet how idle to say in such and such a way trees are good for pictures, and thus and so they should be shunned! All may be good and every aspect desirable, but a caution—a suggestion—may have been useful, and prompted thought and consideration.

And now we are left no space or time to speak of the varied conditions of trees as we find them in nature, and how some forced into strange contorted forms by wind and storm permanently grow as if ever distressed by sweeping hurricane, and some riven and blasted remain, even in brightest days, a token of ruin and desolation. Such trees are chiefly interesting, physically, because curious and exceptional. And yet these strange, weird forms sometimes are useful, but with what care, even reverentially, must they be approached! How that the dark upright stem of the trees growing at right angles to the level grass field is a severe contrast which always seems exaggerated in the photograph, and some undergrowth, grasses or intervening object, seems always required to cover up as it were the point where the stem begins. And then the lighting of trees might form a volume and constitute the study of years. All this and much more must be, for the present at least, left unspoken of.

(To be continued.)



The Fry Manufacturing Company, of 5, Chandos Street, Charing Cross, W., have sent us a very charming enlargement on their roughest bromide paper from a negative by Mr. J. C. Golding, which won the prize for the best picture in the exhibition held by the Holborn Camera Club. The picture is entitled, "Going out to Sea," and it speaks well both for operator and enlargers; we shall be glad to show this to any visitors during this or next week.



## A Universal Hand-Camera.

BY MAJOR BRUNO.

### CHAPTER III.

THE back, or focussing end, of the case consists of a panel sliding in two grooved strips of quarter-inch stuff. These strips, or cleats, are to be firmly glued and screwed to the top, bottom, and right side of the box, and in addition to forming (when the panel is raised) a skeleton frame for

back the rabbets in A A', and at the same time render this part of the case sufficiently dark for accurately focussing on the ground-glass when in place. To carry this out, cut a piece of vulcanite or other thin material (the bottom of an old half-plate developing tray reduced answers admirably) to the shape shown in fig. 7, and of the dimensions shown. When the box is finally put together, this screen, with its focussing aperture F, is glued and screwed to the inside of the strips A A', the rabbets on which are thus converted into grooves, while the interior of the camera will be found dark enough to enable the operator to dispense with a cloth entirely.

The back of the case is now complete. Before describing the front or door, it may be as well to mention that there are two alternative methods of completing the box in this respect, dependent on the position in which the maker intends to fix his shutter. We will dismiss the type of shutter working between the lenses, because it is obvious that with a camera of this description each of the lenses would require to be specially fitted with such a shutter.

A shutter, either forming the "front" of the small bellows camera used inside the box, or screwed to that front, and consequently working behind the lens, possesses the advantage of being always in position for any lens, and the construction of the door is simplified, inasmuch as it then only becomes necessary to provide a door hinged to the case itself, with an aperture large enough to allow the long-focus lens to project through it. But a moment's consideration will show that its difficulties will occur in manipulating the camera if the shutter occupies the position we are considering.

In the first place, it is necessary that the setting and release mechanism should travel with the shutter during the variations of focus. This certainly might be got over, if using a blind shutter, by leading the setting and release-cords through slot F, fig. 5 (p. 434), but such a position for the release, at any rate, is inconvenient. Again, with the shutter behind the lens, it will be found when using a lens of very short focus that a portion of the rays are cut off by the thickness of the camera front and the shutter combined. In addi-

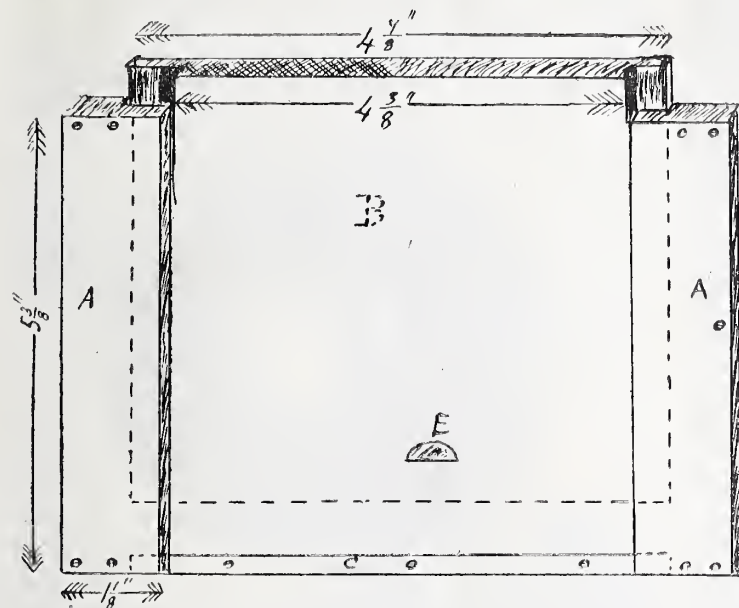


fig 6

viewing the ground-glass, serve to make this part of the case square and rigid.

The arrangement will easily be understood on reference to fig. 6, in which the dimensions of the various parts are given.

A A' are the strips rabbeted, as shown, for one-eighth inch, or half their thickness. If the amateur mechanic does not possess a plough or rabbet plane to take out this shoulder, he should carefully mark off the work, and remove it with a chisel, finally rasping it true and square. These cleats are to be drilled for countersunk screws where shown, to connect them, as already described, to the top, bottom, and, in the case of that marked A', to the right side of the case. C is a strip of quarter-inch stuff, quarter-inch wide, morticed into A A', as shown by the dotted lines, and completes the frame. At the same time it forms a stop for the panel B, when closed. The simplest way to make this panel is to get out two pieces of one-eighth-inch stuff, one wider than the other by the width of the rabbets in A A'. If these are glued together, in opposite directions of the grain, they will, of course, form a similarly rabbeted panel, sliding in A A'. This panel should work truly but rather stiffly, with a view to its remaining in any required position. To move it up and down, a small thumbpiece, E, should be cut with the gouge. It will be noticed that rabbets, not grooves, have been cut in A A', and if left as shown, it is obvious the panel B would fall away to the interior of the case. Further, when this panel is raised, too much light would be admitted for sharp focussing. We therefore require to

back the rabbets in A A', and at the same time render this part of the case sufficiently dark for accurately focussing on the ground-glass when in place. To carry this out, cut a piece of vulcanite or other thin material (the bottom of an old half-plate developing tray reduced answers admirably) to the shape shown in fig. 7, and of the dimensions shown. When the box is finally put together, this screen, with its focussing aperture F, is glued and screwed to the inside of the strips A A', the rabbets on which are thus converted into grooves, while the interior of the camera will be found dark enough to enable the operator to dispense with a cloth entirely.

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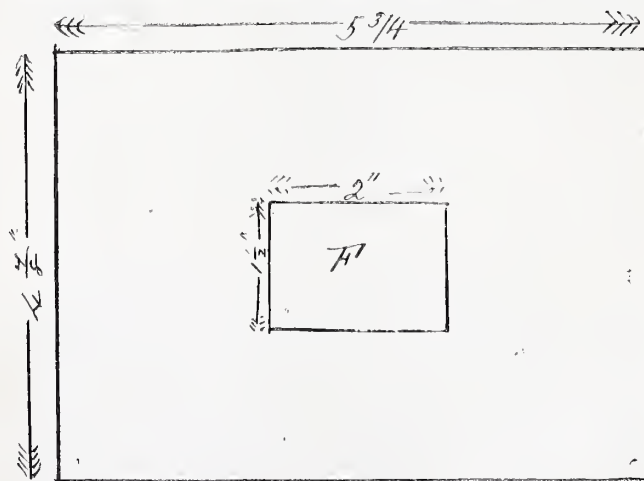


fig 7

tion to this a certain amount of vibration is communicated to the lens, and the less of that we have in our camera the better.

It will be seen at once that if, on the other hand, we place



the shutter inside the door of the box, in front of the lens, with the latter working in a collar as already described, we have the setting and release arrangements always in the same position, there is no difficulty about using a short-focus lens, and no vibration whatever is communicated either to the lens or the plate. Those who have followed the arguments *pro* and *con* so far, may say, "Yes, but what about opening the door of your box (with the shutter forming part of it) when you have a plate or film exposed in the camera?"

The natural sequence would be the immediate ruin of the plate, unless one went to the trouble of putting the shutter of the dark slide, or roll-holder, back in its place before so opening the front of the case to alter the stop or speed of shutter. Although, after all, there is not much trouble entailed by this, the writer fixed a light ebonite safety shutter behind the lens, which not only meets the objection referred to, but dispenses with a lens cap for time exposures with any of the lenses. On the whole, therefore, there can be no doubt that a blind shutter working in front of the lens, but not actually *fixed* to it, is the best we can have for a hand-camera. A shutter of this kind is very efficient, easily adjusted, light, and so simple that it is very unlikely to get out of order. There are several shutters of the blind form on the market, and recently the Thornton-Pickard Manufacturing Co., Manchester, have brought out one with a safety blind, so that the lens is never exposed when setting it. This is an immense advantage when working a roll-holder, for the film can then be wound off ready for exposure, and the movements are reduced to setting and releasing the shutter and a few turns of the winding handle. The utmost ease of manipulation is thus secured. Blind shutters to suit an ordinary quarter-plate lens, fitted with the safety blind, cost ten shillings, and although those who have one of the older forms will no doubt utilise it, we strongly advise those not so provided, to adopt the safety blind pattern. When ordering it, have the aperture to admit the lens tube, or barrel, *not the hood*, and remember this aperture must be just large enough to allow the tube of the  $5\frac{1}{2}$  in. focus lens to move backwards and forwards—an easy fit, in short—and it should be lined with flannel or velvet. Having thus, we hope, satisfactorily solved the questions of position and type of shutter, upon which so much depends in a hand-camera, we will next describe the front, or door, of the case to which the shutter and finder are to be fixed.

(To be continued.)

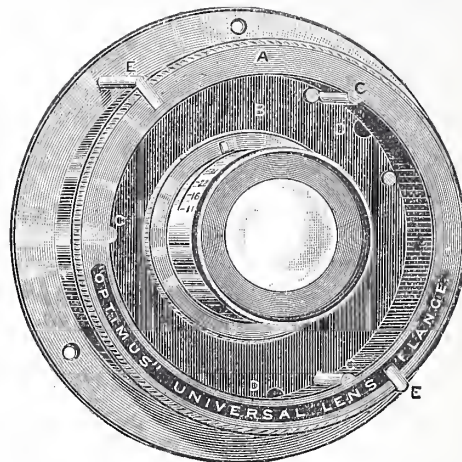
## Apparatus.

### BEYER'S MAGAZINE HAND-CAMERA.

MR. W. BEYER, of 5, Kelly Street, Kentish Town, has introduced a very ingenious little hand-camera, which carries twelve plates, either lantern size or quarter-plate. The plates are placed in special sheaths, which are numbered on the back. In No. 1 camera the plates are changed by a cog wheel worked from the side of camera, each tooth of the wheel catching the top of the sheath, and thus dropping them into the well of camera, one movement only. In No. 2 they are released by a lever working (in conjunction with the special sheaths supplied) right and left, each way releasing a plate. One movement only. Shifting fronts are also supplied with the 40s. and 60s. cameras, and the shutter is at the back of lens (60s. ones) to allow the iris diaphragm to be used. The shutter, which is a plate with an aperture in it, is actuated by cords, and is always set ready for exposure. The camera is made of polished mahogany, and is capable of turning out very creditable work.

### THE "OPTIMUS" UNIVERSAL LENS FLANGE.

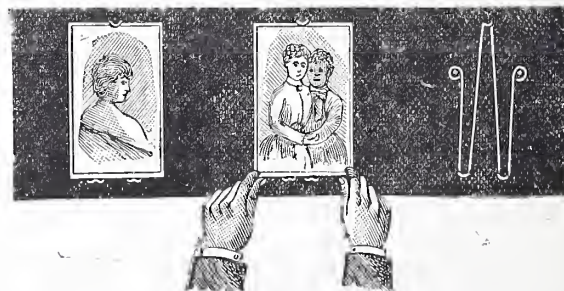
Perken, Son, and Rayment, of 99, Hatton Garden, have just introduced a very useful contrivance which will become an almost indispensable adjunct to the impedimenta of every photographer who possesses more than one lens, and even to the one-lens amateur it will be a great saving of time and trouble. The improvement is a universal lens flange. Everyone who has more than one lens, and uses them in the open field, knows what an annoying thing it is to have to change his lenses by changing his camera fronts, or unscrewing one and screwing in the other. There has been no convenient method of quickly changing lenses, but the new flange will certainly avoid all trouble and bother. The accompanying diagram and explanation will make its action clear. The Universal flange must be first attached to the camera with screws, as usual. We now possess a means of instantaneously and firmly attaching any one of our numerous series of lenses and changing it at will. The movements to obtain this end are not only the most rapid but also the most



simple yet contrived. This will be very readily understood if we say that the little arrangement is an ingenious application of the bayonet catch. Three semicircular recesses are made on the margin of the lens flange; these recesses correspond with three internal projections on the Universal flange. The particular lens about to be used is pushed into the aperture of ring A on diagram. Now hold the lens firmly and describe about one-eighth of a revolution, when it will be found that a rigid contact has been established between lens and camera. A reversal of the movement releases the lens, and others may be consecutively connected. It is obvious that it is only necessary to have all one's lens flanges altered as described above, to make them adjustable to the new Universal holder. The price for 2 in. aperture is 6s. 6d., for 3 in. 8s. 6d.

### THE "FACILIUS" PHOTO CLIP.

MR. W. S. WARD, of 70, Reedworth Street, Kennington Road, S.E., has sent us a very neat little clip for show-cases. As will be seen from the illustration, it is fastened to the show-case by two screws, and the prints are inserted and removed by placing



the top edge under the top clip and slightly pressing up, when on releasing the card, the lower clips will hold the print firmly. This forms a very neat method of wall decoration, as the clips can be fastened to plush or velvet-covered boards, and a print placed in the clip.



## THE "NYS" PLATE.

MR. ROBERT C. MURRAY, of 8, Garrick Street, Covent Garden, has sent us a sample of these plates, which we have found to be very rapid, clean-working, and develop well with pyro and eikonogen. They are sold at popular prices, viz., 1s. for quarter-plates, 2s. 3d. for half-plates.

## ADAMS AND CO.'S PATENT CHANGING BOX.

Messrs. Adams and Co. have submitted to us a changing box which is a modification of the form they use in their well-known Adams camera, and which is so constructed that it may be used with any ordinary camera instead of dark-slides. This box is arranged to hold twelve plates or cut films. The plates or films are inserted in a special form of sheath, which allows the sensitive surface always to come into exact register. To change the plates, a small knob is lifted at the back of the box which raises the plate into a bag, and at the same time changes the number of an automatic indicator. By taking hold of the centre of the bag the plate may be removed from the back to the front

of the box with the greatest ease, and it is then in position for exposure.

The bag used in this box is of a very fine leather, and having no corners does not obstruct in any way the changing of the plate.

Messrs. Adams and Co. have effected a great improvement in the indicator at the back of the box. When the number "12" is reached, an automatic stop comes into play and prevents any plate being used again, but should it be desired for any reason to work round the plates in order to come upon one of a special rapidity, which may have been purposely missed, the stop may be removed from the outside of the box, and this allows of the changing to once more go forward.

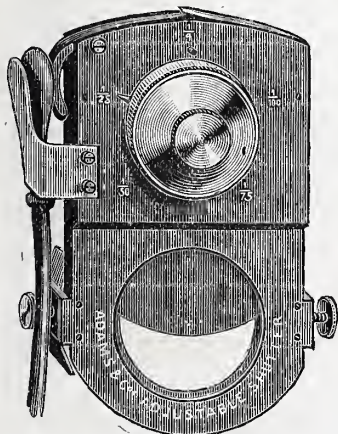
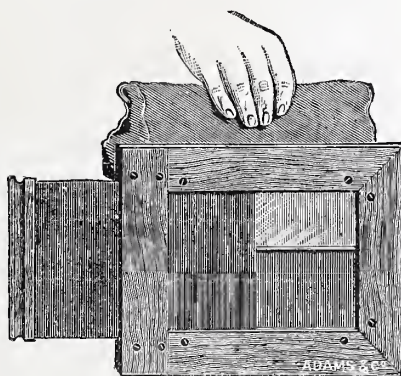
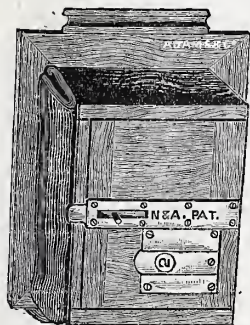
The box is splendidly made in polished mahogany, and is considerably cheaper than six dark-slides, to say nothing of the saving in weight obtained by its use.

It is made in quarter, 5 by 4, half-plate, and whole-plate sizes, and the price of the quarter-plate is 45s.

## ADAMS AND CO.'S "ADJUSTABLE" SHUTTER.

This light and compact shutter is made entirely of metal, and takes its name from the ease with which it may be immediately and efficiently adjusted to the

front of any lens. The motion, permits of more exposure being given to the foreground than the sky, and can be so regulated that exposures of from 1-4th to 1-100th of a second may be obtained at will. Price quarter-plate, 15s. ; half-plate, 18s.



## Amidol.

A NEW ORGANIC SUBSTANCE WHICH ACTS AS A DEVELOPER WITHOUT THE ADDITION OF AN ALKALI.

DR. EDER, in the current number of *Photographische Correspondenz*, gives the following notes on this new substance:—

A completely new type of developers for dry plates has been discovered by Herr J. Hauff, in company with Dr. Bogisch, of Feuerbach. They have called it "Amidol." This substance, mixed with neutral sodium sulphite, gives a very energetic developer, which exerts its full power without any addition of alkaline carbonate or caustic.

It is characteristic that this developer also with acid reaction of the solution energetically develops the images on gelatino-bromide of silver plates, and that an alkaline reaction is not only useless but prejudicial.

Amidol is, according to the discoverers, diamidophenol, which has the formula  $C_6H_3(NH_2)_2OH$ . It is in the form of a white crystalline powder, which dissolves easily in water. The solution has an acid reaction, is colourless, and becomes coloured faintly reddish by long standing, and loses its activity. Alkalis and alkaline carbonates colour the same instantly an intense blue-green. On the addition of borax the solution becomes red-violet.

Neutral sodium sulphite, added to the solution of amidol in water, gives a clear liquid, which keeps colourless very well and forms an excellent developer. The aqueous solution of amidol by itself acts not at all or only in very small degree as a developer for gelatino-bromide of silver.

On the other hand, the experiments undertaken showed that a solution of

|                         |          |
|-------------------------|----------|
| Amidol .. .. .          | 5 parts. |
| Sodium sulphite .. .. . | 50 "     |
| Water .. .. .           | 1,000 "  |

acts as an excellent developer. This develops the image on gelatino-bromide of silver considerably quicker than pyro and soda; the image quickly gains density in developing, and shows beautiful half tones. There is not the slightest tendency to the formation of fog or blisters. The plates attain a sensitiveness in this developer which ought not to be exceeded with any of the other known developing substances.

This new developer is especially remarkable and superior to other analogous developing substances in that it gives beautiful clear images without the addition of alkalis, such as soda, potash, ammonia, caustic alkalies, etc., through which every disadvantage which makes developers with caustic alkalies unpleasant is eliminated. In spite of the faint acid reaction, the amidol developer acts, according to the mixing of the same, as a faultless rapid developer, as well as a slow one. For a normal developer the above given mixture may be used. This can be used several times, after which it assumes a yellowish colour and loses its effectiveness.

The colour of the negatives is a beautiful grey-black; the gelatine itself remains absolutely clear and transparent, even when an ordinary (neutral) fixing bath is used. As restrainer, an addition of 10 per cent. solution of bromide of potassium is to be recommended.

The addition of acids—for instance, sulphuric, citric, acid sulphite of sodium, or the like—act also as restrainers. However, the negatives, even with moderate noticeable addition of acid, are thin, and even with long development only acquire density with difficulty.

As accelerator, a strong solution of neutral solution of sodium sulphite is suitable; if, indeed, the proportion of this salt in the developer is increased to double, it acts not only double as quickly, but brings out the details in the shadows with short-exposed plates better. At the same time the picture is softer.

Addition of alkalies to the developer was proved to be unfavourable, since it becomes not only coloured by the same, but also gives thin, foggy images. Borax acts, indeed, better, but its use has no advantage over the normal developer.

From what has been said, amidol must therefore be considered as an excellent developing agent, since the amidol developer possesses a striking value as a developer as a faintly acid liquid



## Societies' Meetings.

**Aberdeenshire.**—The first meeting of this society held in their own rooms, took place on the 3rd inst. The President (Mr. W. Todd Moffatt) occupied the chair, and there was a large turn-out of members and friends, the professional fraternity being well represented. The usual preliminaries being over, the President called on Dr. J. Mackenzie Davison (Hon. President of the society), to address the meeting. Dr. Davison, after congratulating the members on the acquisition of such suitable premises, went on to speak of "Stereoscopic Photography," strongly urging its working by all classes of photographers. Thereafter the "American Slides" were put through the lantern.

**Bath.**—The first excursion of the season took place on the 28th ult., to Norton Hall, Midsomer Norton, by invitation of Mr. William B. Beauchamp. The party travelled by the S. and D. Railway, arriving at the Hall soon after two o'clock, where they met with a cordial welcome. After a brief rest for refreshments and the determination of the programme of the day, a start was made, and very soon a goodly number of subjects had been photographed ere a passing storm necessitated halting for an hour or so. Fine weather fortunately followed the rain, so the horses were requisitioned and the party driven to Holcombe. Here a disused old church was found possessing a very perfect specimen of a Norman doorway, supposed to have been taken from some other buildings, and among other things some curious epitaphs in the churchyard, date 1800. Here is one: "Come read your doom, And see you must, One day with me—Lye in the dust." Norton Hall is very pleasantly situated in extensive grounds, adjacent to the main road through the coal district, many portions of this road being of Roman construction. Besides extensive views of the famous Mendip range obtainable from the house and grounds, many picturesque scenes were depicted as the party rambled over the domain. The work of the day over the company returned, and were most hospitably entertained. Upon taking leave they were very generously invited to repeat the visit next season.

**Eastbourne.**—A meeting was held on the 1st inst., the Rev. H. G. Jameson (President), Mr. and Mrs. H. Michell Whitley, Mr. and Mrs. Fox Watkins, Dr. MacQueen, Messrs. Arrowsmith, Bird, Eastbury, Haine, Sparrow, Strange, Williams, and E. Burnham (Hon. Secretary) present. Two new members were elected, and one person was proposed for election. The evening was pleasantly passed in listening to a lecture by Mr. F. Arnold, entitled "From Plate to Picture," describing the different actions of light, the different methods of development, and of printing, and giving some useful hints about the camera and the lens, and a few wrinkles in regard to photographing spirits, following up his suggestion that the members of the society should photograph some of the older and more interesting portions of Eastbourne, and present one copy to the Sussex Archaeological Society and preserve a second in the Photographic Society's album. Mr. Michell Whitley presented a list of places which would form fitting objects of attention, together with a few notes in regard to their history. Fifty years ago, he said, the old town consisted of the following:—Borough Lane, Church Street to the Union (formerly the Barraeks), High Street as far as Spring Terrace, Ocklynge Road or London Road from the Lamb to the Gore, Star Lane, and Crown Street, and the noticeable buildings in these streets still existing were St. Mary's Church, the old Parsonage and barns to the north, the Manor House, built by Dr. Lushington in 1771, the Dower House in High Street, the crypt under the Lamb Inn, the Guild of Jesus houses which bound the road on the western side between the Manor Office and the Lamb Corner. Passing down High Street the old Manor House now occupied by Dr. Marsden was an interesting object. This is an old Elizabethan timbered house, and possesses a fine hall now ceiled. It was probably built by Thomas Gildredge about the middle of the sixteenth century. Upperton Farm House was another spot which deserved to be put on record. It was shown on a plan made in 1751. Behind the Drill Hall stood the old watermill house—the old Manor mill which had existed for many centuries, and it possessed additional interest as being the birthplace of Mortimer, a man of splendid but erratic talents, and of whom as a painter Eastbourne might well be proud. Of South Bourne the only old houses now remaining were those in Grove Road and South Street as far as Greystone Cottage. The Susans was a very old building, and shown on a plan in his possession dated 1720, and it might be interesting to note that the broad footpath overshadowed by trees which divided Trinity Church from Seaside Road was then known as Stays or Straws Bush Footway. At Sea Houses the old buildings were on the Marine Parade from the Queen's Hotel to Seaside Road, and these should be photographed without delay, as changes were taken place there. The blocks of houses on the south of Seaside between the last-mentioned group and the ordnance grounds were also worthy of attention.

**Faversham.**—The monthly meeting was held in the committee room on the 17th ult., Dr. Evers in the chair. Mr. F. Crosier gave

his promised demonstration of "Photography by Night," by taking portraits of gentlemen present, under varying circumstances, using magnesium wire for artificial light. The Society held its first excursion of the season on the 24th ult., at Sharsted, when twelve members took advantage of the kind permission of Faunce de Laune, Esq., to visit his spacious and picturesque grounds.

**Haltwhistle.**—The annual meeting was held on the 30th ult. In the absence of the President and Vice-president, Major Anne was voted to the chair. The Secretary read the following report:—The society have met seven times during the year. Demonstrations on Enlarging and Lantern Slide Making have been given, as well as a number of lantern entertainments. The 1890 and 1891 Prize Slides and Inland Scenery prints from the Editor of the AMATEUR PHOTOGRAPHER, the 1890 Prize Slides and one set of Charity Slides from the Editor of *Photography*, and the White Mountain Set from the Boston Camera Club have been exhibited. An excellent public lecture, with slides, by Mr. J. P. Gibson, Hexham, entitled "The Tyne and Tyneside," was also a success. The society are also much indebted to five of its members who have purchased a fine bi-unial lantern at an outlay of £14, and which has been placed at the service of the society. The office-bearers for the current year are Dr. Speirs, President; Mr. George Clark, Vice-President; Mr. D. Macadam, Hon. Sec. and Treasurer. The remainder of the ordinary members the committee. The income for the year was £5 2s.; expenditure, £5 3s. 8d. The rules were read and accepted, with some minor alterations. The first outdoor meeting will be held the first week in July. One honorary member was proposed and accepted.

**Holborn.**—Mr. R. Luxton in the chair, on the 3rd inst., Mr. H. West opened a discussion on "Landscape Photography." He confined himself strictly to artistic productions. He did not for one moment think photography was a high art—it was impossible to be so; but a man with a little bit of the artist in him, and conscientious in his selection of the subject and the way he carried it through the after process, might, if not make photography a high art, very near approach it. He proposed to give them his idea of the composition of a landscape picture. A picture should appeal to one's artistic feelings, and a knowledge of composition was very important if a picture was to be turned out. He put the chief rules of composition before those present, and gave illustrations which clearly interpreted those rules. He made a special point of the three planes, foreground, middle distance, and extreme distance. He gave a few hints on exposure, and then dwelt on the developing portion of the work. A perfect knowledge of the capabilities of the different solutions which formed the developer was essential. He gave broad outlines for proceeding to develop, but as every plate required a different mode of treatment, it was extremely difficult to give information on strict lines. They must go cautiously to work. The last and most important part was the printing of the negative; whether it was printed bromide, silver matt-surface or glossy, it should suit the subject. The chief end in photography was the finished print. What did it matter if the negative was not technically correct, if the resulting print was right? An interesting discussion followed. Mr. J. Raphael showed a hand-camera called the "Surprise," which had a very original changing arrangement, and would appeal to many photographers who would require a cheap and good hand-camera. Members are requested to take notice that the Finner outing is postponed to the following Saturday, June 18th, the members being invited to a tea at the "Green Man," Mill Hill, (Edgware) on Saturday, June 11th, by Mr. C. O. Burgess, the President of the Holborn Cycling Club; tea at 6.30 p.m.

**South Manchester.**—The monthly meeting of the Society was held on the 30th ult., Mr. W. I. Chadwick in the chair. Messrs. J. Aitchison, jun., and J. Wild were elected members. The chairman presented the Society with an enlarging lantern, and in the course of his remarks said, "that although bromide enlargements were very nice, if well done, still he did not think that the results could compare with those obtained, either by the platinotype or carbon processes." The thanks of the Society were awarded to Mr. Chadwick for his very handsome present; and Mr. Linnell, in proposing the same, said he hoped the members would make good use of it. Results of the Miller's Dale ramble were then shown by several of the members, chiefly in the form of stereoscopic transparencies, and were pronounced very successful. Mr. Linnell also exhibited the negatives, which were taken on Edwards's films, and in the discussion that followed as to the relative advantages of films over glass, it was shown that the results were quite as satisfactory, and as regards the weight, one dozen films (6½ by 4½) with packing, weighed five ounces, whereas one dozen plates weighed forty ounces. In one case he had cut the film and transposed the two sides, with the result that a stereoscopic transparency could be obtained from one printing. Messrs. Marion and Co's. "Radial" and Metal Miniature" hand cameras, along with Messrs. Hurter and Driffield's Actionograph, were laid on the table for the inspection of the members. Specimen photos on Fry's roughest bromide and Soltype papers were also shown. Some exposure note-books sent by Messrs. Mawson and



Swan were distributed amongst the members. In the absence of Mr. Wilkinson, the Secretary exhibited the Beard-Pringle lantern, which was very much admired for its compactness. Slides done by the members were then passed through, some of the works being very good. An adjournment was then made to the lecture hall, when some beautiful flash-light pictures taken behind the scenes at the Comedy Theatre, during the last two pantomimes, by Mr. Wade, President of the Manchester Amateur Society, were shown by aid of the lantern, and some American views brought by the chairman.

**Southsea.**—At the general meeting, held on the 1st inst., Mr. J. J. Thornton was elected President of the Society, vice Captain Cobb, R.N., whose resignation of that position, on leaving the neighbourhood, was received with universal regret. Dr. Ford was elected Vice-President, and Mr. Hammond a member of the Council. An excursion to Bosham will take place on the 18th inst. The President and Vice-President have offered prizes for the best figure and landscape studies, the result of this excursion. It is proposed to hold an exhibition of prints and lantern slides in the autumn.

## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance the number and full title of the query referred to.

## QUERIES.

5715. **Snap-Shots.**—Will any brother amateur, who has used "Lancaster's quarter-plate Instantograph," kindly inform me what plates are the best to use with the shutter supplied with same, also how best developed?—**SNAP-SHOT.**

5716. **Photographing in London.**—Will any of your London readers be kind enough to give another of North Britain some information as to what restrictions and liberties there are for photographing public buildings and places of interest in and around London, also as to which camera is the more suitable, the hand or ordinary tripod camera?—**"SCOT."**

5717. **Pyrogallie.**—Will anyone kindly oblige by giving the reason why pyrogallie acid discolours the plates and makes them brownish after development, and if there is a remedy; also if 1 oz. pyrogallie acid will keep well mixed with 7 oz. of water and 30 gr. citric acid.—**FRA.**

5718. **Ingleton.**—I purpose making a tour of Ingleton and neighbourhood first full week in July. Will any fellow reader kindly say if there are any nice "bits" to be found at this place; if any brother camerist wishes to make a tour of the above-named place with me, I shall be glad to have his company; for address, please write Editor, **AMATEUR PHOTOGRAPHER**?—**J. P., PRESTON.**

## QUERIES UNANSWERED.

- May 6.—Nos. 5660, 5662.  
 " 13.—Nos. 5670, 5672.  
 " 20.—Nos. 5680, 5681, 5682, 5683, 5684, 5688, 5689, 5690.  
 " 27.—Nos. 5694, 5695, 5696, 5697, 5698, 5699, 5701, 5703, 5706, 5707.  
 June 3.—Nos. 5709, 5710, 5711, 5712, 5714.

## ANSWERS.

5673. **Choroscope Lens.**—Divide the focal length ( $7\frac{1}{2}$  in.) by the diameters of the stops, and the quotient is the focal value in each case. The lens works at  $f/11$ , and the minimum is  $f/62$ .—**P. DOWLING.**

5708. **Norway.**—The light in Southern Norway, round Christiania, etc., is much stronger than in England, and you will have to expose one-third or

one-quarter of the time you would here. I have taken photographs on Ilford ordinary plates, giving the same exposure that I gave Edwards's Isochromatic instantaneous in England. The best dealer in photographic instruments in Christiania is Abel, in the Universitetsgade, I believe, almost opposite the Houses of Parliament. I am not sure that he keeps English plates.—**TR. WIRRMID.**

5713. **Tricycle for Tour.**—I should advise "Anglo-Indian" to see Messrs. J. Stassen and Son, Nos. 253 and 329, Euston Road, N.W., who will make him the very thing that he requires.—**W. BLIZZARD.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us BEFORE **TUESDAY MORNING'S POST** if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED. AM. PHOT.**

F.D. BURDIS.—You can keep hypo in a saturated solution, but as the strength of this varies with the temperature it is rather an unsatisfactory plan; the better way is to place a pound of hypo in a saucepan, add about 8 oz. of water, and place on the fire or gas stove; when dissolved strain, and make the solution measure 32 oz., which will be a strength of 1 in 2.

FONO.—We will try and let you have the negatives, etc., back. It was not our intention to return them, though.

ALPHA.—Reply on p. 444, second column, at foot.

CUPID DISCREP.—(1) Would stand a little more printing. (2) Good. (3) This is a face which could only be treated in profile or nearly so; as it is, it looks very much as though the sitter was suffering from a swollen face on the right-hand side. (4) A little too hard, more detail wanted in the whites. (5) Why not have made this sitter either pick or arrange the picked flowers? The expression is not good, and it gives us the idea of hydrokinone developer; it is rather flat. (6) Utterly spoilt by the incongruous background. (7) Overtoned. (8) Good. (9) One shoulder is much higher than the other; the effect is deformity. (10) Good. (11) Good. As portraits, most of them show careful work, but when we have said that, we have said all. Try character and figure studies, don't vignette quite so much, and make your sitters look pleasant; too many of them have a "prunes and prism" look. Judging from the work the lens is excellent for your work. Your work is superior to an enormous quantity we get in our competitions so far as regards technique, but it wants artistic treatment.

T. W. BIRDSALL.—We cannot at present trace these photos, but will try. Please address all letters to the Editor, not individuals.

SANITAS.—The sets are very efficient and convenient, and we have had one in use for years.

F. DUNNAS TODD.—We debar the winner of a Monthly Competition Medal from entering a Monthly Competition again, but our big competitions are open to all.

NEMO.—You do not state whether the film is varnished or not. The best plan would be to strip it altogether and place on fresh glass.

PLUMSTEAD.—The paper is ready; see advertisement last week.

PYROGALLIC.—No one can prevent you from taking a photograph of any public building or private house as long as you do not trespass.

FLINT GLASS.—We are very sorry, but we dare not insert your letter; it is too forcible. We do not want to be embroiled in any squabbles. Everybody of any good sense ignores these scurrilous and ill-written articles, nor do they do the paper in question any good.

ENGLAND FOR THE ENGLISH.—Why not send us your name and address. Anonymous communications, espe-

## SOCIETIES' FIXTURES.

- June 10.—**HOLBORN CAMERA CLUB.**—Mr. E. Clifton on "Development in Practice."  
 " 10.—**RICHMOND CAMERA CLUB.**—"Toning with Salts of Platinum," Mr. Ardaseer.  
 " 10.—**KENDAL.**—Mr. G. H. Dodgson on "Pictorial Composition" accompanied by illustrations.  
 " 11.—**ISLE OF THANET.**—Excursion.  
 " 11.—**OLDHAM PHOTOGRAPHIC SOCIETY.**—Ramble.  
 " 11.—**WEST LONDON.**—Watford.  
 " 11.—**NORTHAMPTONSHIRE.**—Excursion to Gayton.  
 " 11.—**HACKNEY.**—Excursion to Eynford.  
 " 13.—**DARLINGTON.**—Mounts and Mounting.  
 " 13.—**CAMERA CLUB.**—8 p.m. opening of Exhibition of Photographs by members of the Amateur Photographic Field Club; 9 p.m., Exhibition of Lantern Slides, by Mr. T. M. Browning, Mr. C. Burton Barber, and other members of the Field Club.

cially when they find fault, are always scurvily treated by us, by being dropped into the waste paper basket. We know the illustrations were not good, and had already lodged a serious complaint with the printers on the subject. We hope, however, that this may be remedied in the new volume, as we are considering an improvement. All our blocks are English work.

LUX.—(1) Fearfully flat. (2) What a pity not to have made your figure fish, so as to have given some interest to it. (3) Good. (4 and 5) We cannot see why you took these, though No. 5 is not a bad study of trees. (6) You have at least got plenty of sunshine here, the effect of that is very good.

CHARLES OLIVER.—Both your prints are over-exposed. Rodinal gives good black and grey tones. Bromide prints are permanent if well fixed and washed.

S. R. CARSBERRY.—Add one part of Rodinal to 200 parts of water, and about ten drops of 10 per cent. solution of bromide of potassium.

J. LINGARD.—The lens may be used as a fixed focus lens if you like. Having a scale would not be much trouble, and might be useful sometimes. You would find full particulars of distances of fixed focus on p. 394, Nov. 27th, 1891. The distance varies with the diaphragm aperture.

J. MCPHERSON.—(1) The fault may be due to your negatives or to your not allowing the bath to stand a little time; try adding a pinch or two of carbonate of soda to the bath. (2) We can hardly say there is a better bath than the borax, though many are in use; try replacing the borax by phosphate of soda. (3) Filter the bath after using. (4) About half an hour is required to tone to a greyish black, but this is very difficult to attain. (5) There is no method of removing the stains. (6) Plates should not be soaked in water before developing. (7) Yes, the rapid plates take longer to gain the required density. (8) Thirty times means thirty times wet collodion, Ilford ordinary plates are what are called thirty times.

L. G.—We should recommend No. 5 as the most useful.

F. W. G.—(1) Taylor, Taylor and Hobson's viewfinders are quite satisfactory, and may be had from any dealer or direct. (2) The formula recommended will give good tones with good negatives, but not actually black. (3) The bath will keep fairly well.

U. B. SMART.—(1) Practice alone can teach you this. The we always hold the meter about 24 in. from the eyes, and can then readily distinguish the variation of tint. (2) If there is a very heavy shadow in which you want to get detail, expose the meter in the shadow if convenient, but if not, expose in your own shadow facing the meter to the light. (3) It is not always possible to obtain lots of emulsion made at different times, always of the same rapidity, hence the statement. (4) At the end of this month. (5) Yes, we should be pleased to pick you out about 100 good print.

C. F. H. HARTLEY.—No, the solution is a special formula, containing hydrofluoric acid.

F. FARTRIDGE.—The solution acts well for bromide paper, but not so well as ferrous oxalate.

TRIN.—(1) The exhibition opens on the 8th inst., and will be well worth seeing. (2) A card cut out or piece of glass with shaded edges is generally used. We will write you further when we return negatives.

YARDLEY.—Both the groups flat and foggy. The quarter-plate is very fair, but would be improved by clouds and printing on gelatine chloride paper; this is up to competition standard.

G. W.—Use Isochromatic films or plates most certainly.

NEVER SAY DIE.—Yes, the prints would be admissible for Photography at Home Competition.

E. C. ALEXANDER.—(1) Negative wants intensifying, and print trimming down so as to include only the carriage and occupant. (2) Wants clouds, and an inch off foreground; well developed and printed. (3) Not sharp enough in foreground. (4) Wants an inch off foreground, print stained. (5) Fair. Why not have made top of tower sharp? (6) A little too deeply



printed, and composition runs too much to right. (7) Most fearfully stained, and too chalky. (8) Spoilt by cutting the ends of the bridge off. (9) Wants an inch off foreground and clouds. Your prints show careful work, except in mounting, when they get horribly stained. You are using also too much pyro and bromide, so that the high lights are too white. Let us see some more work presently.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence. Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word: compound words count as two words.)

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m. and other communications having reference to the Sale and Exchange) column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Cameras, Lenses, etc.**—Turnbull's band or stand camera, R.R. lens, focussing arrangement, six double slides, time or instantaneous shutter, £3.—Whiteside, St. Nicholas, Cardiff.

Special Omnigraph detective, fitted Instantograph lens, two sliding mounts having instantaneous and pneumatic See-saw respectively, focussing screen, sliding door, changing box holding six plates, finder, etc., price 25s., perfect, cost nearly double; whole-plate portrait lens, 30s.; Lancaster's whole-plate landscape and 10 by 8 W.A., 6 in. focus, 10s. and 15s.; two achromatic lenses, unmounted; approval.—Rev. S. Rae Henry, Portlengone, Belfast.

Ross' cabinet portrait lens, splendid instrument, also old-fashioned mahogany bellows camera, and three dark slides, suit professional, the lot £5.—Cole, 4, Prince's Street, Yeovil.

**Hand-Cameras, etc.**—Hand-camera, quarter Luzo, loaded with spool of Eastman's transparent films (48), including leather case, nearly new, cheap, £4; no exchange.—J. A. E., 12, Evelyn Gardens, London, S.W.

Bargain! Marvel, with finder, 8s., nearly new, suit beginner.—Fodd, 66, Frampton Park Road, Hackney.

Artist's hand-camera, 3½ by 4½, cost £10 10s., London Stereoscopic Company's latest, with three slides, 7 doz. Carbutt's flexible negative films, two printers, five vulcanite trays, toning bath, case of sensitised papers, lamp, etc., complete, price £7; also Stirn's Secret camera, with case fitted with chemicals, lamp, etc., 30s., or the whole £8, all brand new.—No. 293, office of this paper, 1, Creed Lane, E.C.

Miller's Adelphe stereoscopic hand-camera, almost new, fitted with pair Wray's special rectilinear lenses, Thornton-Pickard shutter, etc., £8.—Archer, Victoria Park, Wavertree, Liverpool.

**Lenses, etc.**—Splendid half-plate R.R., iris diaphragms, movable hood, never used, bargain, 17s. 6d.—L., 8, Kenilworth Road, Kilburn, N.W.

Excellent half-plate R.R. lens by London Stereoscopic Company, 37s. 6d.—L. R., Holmwood, Walton Park, Clevedon.

8 by 5 Optimus lens fitted with whole-plate Newman shutter, quite new, £3 3s.—352, King's Road, Chelsea.

Wray's half-plate lens, iris diaphragm, list price 85s., sell for 65s., quite new.—Batho, Chemist, Torquay.

Lancaster's whole-plate rapid rectigraph lens, 11 in. focus, Waterhouse stops, for sale, 30s. taken; approval on deposit.—M., Bolney Vicarage, Hayward's Heath.

**Negatives.**—Fifty quarter-plate instantaneous negatives, views of London, suitable for making lantern slides, 1s. each; specimen negative and list post free, 1s. 3d.—John Stahh, 154, Queen's Road, Bayswater.

**Sets.**—Underwood's half-plate set, nearly new, rapid single lens, rack adjustment, sliding front, reversing back, two double dark slides, Tylar's rebounding shutter, quarter carrier; approval; deposit; £3.—F. Bailey, St. John's Lane, Canthurhy.

Complete whole-plate equipment. Whole-plate camera by Ross, with Ross' R.R. lens, 8½ by 6½, Optimus R.R. lens, 9 by 7, and Dallmeyer's wide-angle R. lens (patent), all three adapted to camera, four double dark slides and two or three double metal slides, tripod, etc., also an Eastman's rollholder with nearly full spool, full-plate size, and fitted to camera, price of all £15, much less than half original cost; a 7 by 5 camera by Tench, Suter's landscape and Steinheil's R.R. lenses, £6.—Apply to F. A., 25, Lansdowne Crescent, Notting Hill.

Lancaster's extra special half-plate brass-bound camera, three double slides, brass bound, quarter-plate carriers, instantaneous lens, See-Saw shutter, tripod, and leather case, cost £8, guaranteed as new, sell for £5 5s.; approval.—W. J. Bennetts, Beacon, Camberne.

A chance not often met with. To be sold, a beautiful 5 by 4 magazine camera, specially made for owner, Wray R.R. lens, iris diaphragm and Caldwell shutter, focussing arrangement, guaranteed perfect for all classes of work, price £8 10s. (cost £13 5s.). Can be seen in London by appointment. Address, Camera, care of Housekeeper, Dabwood House, Old Broad Street, London, E.C.

**Sundries.**—To be sold, price 4 guineas, cost 5, the Incandescent Gas Light Company's apparatus as applied to portraiture, enlarging, etc., or will exchange for good portrait lens.—No. 296, office of this paper, 1, Creed Lane, E.C.

I will exchange Ross' best £10 deer-stalking telescope for Dallmeyer 10 by 8 rapid rectilinear.—Apply, A. L., Birch Lodge, Lyndhurst.

Marshall's drop shutter for 2½ in. hood, with pneumatic release, 2s. 6d.; three Tylar's metal double slides, quarter-plate, with focussing chamber, 5s.; 16 ft. rubber tubing with teat and hall, complete, 6s.—H. Press, Broad Street, Bath.

Half-plate Warnerke rollholder for films, cost £3, price 15s.; quarter-plate Lancaster's Instantograph camera, excellent lens, two instantaneous shutters and two double slides, 25s.; also Eastman's quarter-plate rollholder, 20s.; view finder, 3s.; all in good condition.—A. L. Spiller, Hillside, Hampstead Hill Gardens, London.

## WANTED.

**Actinometer.**—Wanted, Stanley's actinometer.—Jeremiah Deane, Camp Post Office, Tralee, Kerry.

**Cameras, etc.**—Wanted, good half-plate camera, with or without R.R. lens and tripod.—M., 7, Victoria Street, Barnsley.

Wanted, a half-plate camera by Watson; approval; deposit; state full particulars.—W. H. Baker, Glenburn, Rawlinson Road, Oxford.

Quarter-plate camera (Lancaster's preferred), tripod, dark slide; exchange for hanjo, nickel fittings (cost 30s.), and part cash.—Fodd, 66, Frampton Park Road, Hackney.

**Hand-Cameras, etc.**—Facile or other cheap hand-camera wanted.—Pellatt, 81, Bishopsgate Street.

A second-hand Facile hand-camera, in good condition.—H. Faulkner, Clifton College, Bristol.

**Bargains in Lenses.**—For sale, 15 by 12 Optimus wide angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; 12 by 10 Lancaster's wide-angle rectigraph Silver Ring lens, as new, fitted Iris stops, 9 inch focus, or as narrow angle; single combination, 20 inch focus, grand article, £2 15s.; whole-plate Lancaster's Silver Ring rectigraph lens, quite new, grand definition, covers 9 by 7 well, works f/10, take 60s.; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; half-plate rapid rectilinear, fine definition, by Caiey, Holborn, fitted Iris stops, as new, £1 5s.; 7 by 5 Optimus rapid rectilinear lens, Waterhouse stops, finest condition, covers well, 37s. 6d. lowest. Portrait lens, cabinet size, rack focussing finest order, take 17s. 6d.; half-plate Lancaster's Instantograph lens, Iris stops and instantaneous shutter, as new, 15s.; quarter-plate Ross' landscape lens, as new; a little beauty for all-round work, £1 7s. 6d.; quarter-plate portrait lens, rack focussing, a really

good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse stops, cover 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

## Bargains in Cameras and Sets.

Whole-plate Optimus Rayment set by Perken, Son, and Rayment, all the latest improvements, best leather bellows, double extension, reversing back, etc., fitted Optimus rapid rectilinear lens, by Optimus, one double slide Eastman's Roll Holder, folding stand, two cases, etc., cost £18 18s., take £10 17s. 6d. lowest. Whole-plate Lancaster's Special Brass-bound, square leather bellows, back extension, rapid rectilinear lens, Iris stops, folding stops, and double slide, as new, £4 4s.; Lancaster's whole-plate 1891 Instantograph, as new, all improvements, including camera, Instantograph lens, iris stops, instantaneous shutter, double slide, and folding stand, take £5 5s.; stereoscopic camera by Hare, size, 7½ by 5, best leather bellows, double extension, swing-back, rising front, etc., fitted Chadwick's Landscape lenses, rotating stops, Thornton-Pickard time and instantaneous shutter and double slide, lot quite new; a real heavy, take £6 6s., cost £13 13s.; Dallmeyer stereoscopic camera, rack focussing, swing back, three double and one single slides, fitted Ross' actinic doublet lens, rotating stops, 5½ in. focus, £7 10s., a rare bargain; Stereoscopic Company's half camera, finest mahogany, leather bellows, reversing, three double slides, Stereoscopic Company's rapid rectilinear lens, Waterhouse stops and folding stand, £4 15s., as new; half-plate camera by Wynne, Holloway, square leather bellows, rising, falling, and cross fronts, three double slides, Wynne rapid rectilinear lens and two fold stand, take £4 17s. 6d., lowest, quite new; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s., worth £5; Lancaster's stereoscopic Instantograph, as new, two double slides, 6½ by 3½ Instantograph lenses, instantaneous shutter and folding stand, take £3 17s. 6d., quarter-plate Le Meritoire set, complete, camera, lens, slide and stand, 21s. lowest. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Photographic Appliances.**—Accessories and apparatus by all the following makers are always in stock; call and inspect any article you may wish to purchase, and compare with different makers' goods and you will be able to possess the best and most suitable article for your purpose. Special large selections of Lancaster's goods, all Optimus cameras or lenses, Underwood's cameras, Fallowfield's Hand cameras, Talmer Hand cameras, Ideal Hand cameras, etc. All makers' plates, Ilford plates and papers, Paget plates, Thomas's plates, Fry's plates, Mawson's plates, silver papers, bags, cases, valises, 2-fold, 3-fold, and 4-fold stands, dishes, printing frames, etc., etc. Write for list to Manager, City Sale and Exchange, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Cameras! Cameras! Cameras! Lenses! Lenses! Lenses!** and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Hand Cameras.**—Rough's Eureka hand-camera, fitted instantaneous double, same makers, carries 12 ½-plates, time and instantaneous shutter, covered black russian leather, as new, £4 17s. 6d. lowest. Talmer Hand-camera, as new, fine lens, time and instantaneous shutter, two large finders, carries 12 plates, take £2 17s. 6d.; Optimus Magazine hand-camera, carries twenty-three quarter-plates; Optimus Euryscope lens, two finders, best condition, take £5 15s.; Houghton's Automatic hand-camera, 12 quarter-plates in case, rapid rectilinear lens, rotating stops two finders, as new, £4 10s. lowest; London Stereoscopic Company's Despatch detective, covered black leather, fitted Stereoscopic Company's rapid rectilinear lens, Newman's shutter, two finders, three double slides, rack focussing, size quarter-plate, as new, take £6 6s., cost £10 10s.; King's hand-camera, thorough order, carries 12 ½-plates, fine lens, two finders, take 25s. lowest; Griffiths' hand-camera, quarter-plate, three double slides, finder, good lens and shutter, take 17s., quite new; Stirn's Detective waistcoat camera, silver plated, six views on each plate, quite new, 20s. All above warranted in every finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).



# The AMATEUR PHOTOGRAPHER

Telephone No. 1645      Telegraphic Address: VINEY, LONDON

Offices: 1, Creed Lane, Ludgate Hill, London, E.C.

No. 402. Vol. XV.]

FRIDAY, JUNE 17, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare*.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—Royal Cornwall Polytechnic Exhibition—Esmail Enamel Competition—International Union of Photography—An Apology.

LEADER.—Notes on Enlarging.

LETTERS.—Permission to Photograph (Nettled Amateur)—Exeter Amateur Phot. Soc. (J. Sparshott)—Prize, Medal Excursions (H. Maclean)—City and Guilds Examination (W. F. Martin).

ARTICLES.—Elementary Photography (Hodges)—Some Condition Influencing the Welfare of Photographic Societies (Harrison)—Gelatino-Chloride of Silver Paper (Mummery)—With a Camera in Spain (King).

EXHIBITION.—Lincoln Camera Club.

SOCIETIES' MEETINGS.—Durham—Exeter—Hackney—Harlesden and Willesden—Holborn—Kimberley—Lewes—Lewisham—North London—South London—Tunbridge Wells—Walton.

ILLUSTRATED SUPPLEMENT.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the Editor, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

### TERMS OF SUBSCRIPTION.

|                        |                         |                          |
|------------------------|-------------------------|--------------------------|
| UNITED KINGDOM.....    | Six Months, 5s. 6d..... | Twelve Months, 10s. 10d. |
| POSTAL UNION .....     | 6s. 6d.....             | " " 13s. 0d.             |
| OUT OF POSTAL UNION .. | 7s. 9d.....             | " " 15s. 3d.             |

TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALK AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZEL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE AND EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

THE Royal Cornwall Polytechnic Society will hold their sixtieth annual exhibition on Tuesday, August 23rd, and four following days. There is a special class devoted to photography by professionals and amateurs, which also includes photographic apparatus. No charge will be made for wall space, and list of prizes and all information may be obtained from Mr. E. Kitto, F.R.Met.S., The Observatory, Falmouth.

In all cases must be stated whether the work is professional or amateur, and the process of production. All work sent for competition must have been executed within eighteen months of the date of this exhibition. Carte-de-visite portraits are excluded from exhibition except when illustrating some special process or novelty. All enlargements for competition must be the work of the exhibitor.

Information respecting the photographic department may be obtained from Mr. W. Brooks, Laurel Villa, Wray Park, Reigate (member of the General Committee).

### PROFESSIONAL.

Medals are offered by the Society for meritorious productions in the following subjects:—

*Out-door Photography.*—(1) Landscape, not less than 20 in. by 16 in.; (2) Landscape, 12 in. by 10 in., and under; (3) Genre; (4) Architectural (exterior); (5) Instantaneous, including marine; (6) Animals; (7) Enlargements.

*Indoor Photography.*—(1) Portraits, not less than 20 in. by 16 in.; (2) Portraits, 15 in. by 12 in., and under; (3) Home portraiture; (4) Still life, flowers, etc.; (5) Interiors, architectural or otherwise; (6) Photo-micrographs; (7) Enlargements.

### AMATEUR.

(1) Landscapes; (2) Architectural, exterior or interior; (3) Hand camera work, not less than twelve examples; (4) Instantaneous including marine; (5) Still life; (6) Enlargements.

PHOTOGRAPHIC APPARATUS.—With a view to offer facilities to manufacturers to bring their specialities prominently before the public in the West of England, the Society purpose this year to apportion space for photographic apparatus generally, including the lantern and its appliances. An entrance fee of 10s. 6d. is charged in this department to cover expense of unpacking and repacking goods, and attendance at the exhibition.

THE competition instituted by Mr. A. Guye for the best result obtained on his "Esmail" Enamels has now been decided, and the result is as follows:—

|                    |                             |
|--------------------|-----------------------------|
| First Prize, £9 .. | .. Mr. J. H. Gear (London). |
| Second Prize ..    | .. Withheld.                |
| Third Prize ..     | .. "                        |

The results were certainly not of very first-rate technical quality, but showed at least that considerable interest was taken in this by our readers.

"Amateur Photographer" Monthly Competition No. 37.—"PORTRAITURE AND FIGURE STUDY." Latest day, June 27th. —Prizes: Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, July 15th.)



At the International Congress of Photography, held at Brussels in August, 1891, it was proposed to found an International Union of Photography "with the object of bringing about a closer union between amateur photographic societies and all other persons who practise or are interested in photography." The membership is to be of three grades, viz., patrons, founders or life members, and working members. Patrons have to subscribe £4 to the funds of the Union; founders must subscribe £12 before August, 1892, the first sitting, after which time they will be called life members; working or active members subscribe 16s. annually. Amateur societies may become affiliated. The International Photographic Union will hold an annual meeting, and the first will be in Antwerp in August. The Union will publish an official annual, and also an illustrated quarterly journal, and the publications will be in three different languages. The General Secretaries are,

M. A. Goderus, Barrister-at-Law,  
8, Rue du Poivre, Ghent, Belgium;

and

M. S. Pector,  
9, Rue Lincoln, Paris,

to whom applications for membership must be addressed. If any convenience to any of our readers, we shall be pleased to receive subscriptions and transmit to the Secretaries.



THROUGH a printer's error in our last issue a valuable testimonial for the Barnet plate from an amateur of twenty-two years' experience became overlooked. The advertisement outside cover of last issue should have read—"Read the opinion of an amateur, etc., of the Barnet plate, *vide* page ix," not page vii., as stated. The testimonial appears in this week's issue, page iv.



#### NOTES ON ENLARGING.—XIV.

##### SENSITISING CANVAS FOR ENLARGEMENTS.

A WRITER in the *Photographische Correspondenz* gives the following methods of sensitising canvas for enlarging direct. The canvas must first be well washed with a solution composed of

Liquid ammonia .880.. .. 10 parts  
Alcohol (methylated) .. .. 40 "

A clean pad of linen should be used till the film shows no sign of greasiness, and is then allowed to dry thoroughly. The following solution is then made:—

Gelatine .. .. 7 parts

This is allowed to soak in

Distilled water.. .. 250 parts

till soft, and then dissolved by the aid of a gentle heat. In the meantime take

Fresh egg albumen .. .. 50 parts  
and mix with

Distilled water .. .. 125 parts

Add

Potassium iodide .. .. 9 parts

Ammonium bromide .. .. 4 "

Ammonium chloride .. .. 1.25 "

Beat the solution well, allow to stand for about one hour, and filter through flannel, and add to it

Distilled water .. .. 125 parts

and the solution of gelatine prepared as above. The solution is flowed over the surface of the canvas, or, preferably, applied with a Buckle or Blanchard brush, or small piece

of sponge. The coated canvas is then allowed to dry, and several thus prepared may be stored for use, and sensitised as required by the following solution:—

Silver nitrate .. .. 20 parts  
Glacial acetic acid .. .. 10 "  
Distilled water .. .. 240 "

A small quantity of this is poured on to the gelatinised canvas, and evenly distributed with a Buckle brush, and exposed whilst still wet, allowing about seventy-five seconds to elapse between sensitising and exposing. This is fairly sensitive, about sixty seconds being required for a good light from a clear sky with an ordinary negative. When the exposure is complete develop with

Gallic acid .. .. 3.5 parts  
Lead acetate .. .. 6 "  
Distilled water .. .. 250 "

Apply to the canvas in the same manner and with the same brush as used for the sensitising solution. When sufficiently dense rinse, and fix face downwards in

Hyposulphite of soda .. .. 20 parts  
Water .. .. 100 "

##### MODIFIED FERROUS OXALATE DEVELOPER.

###### 1. Cooper's Formula.

(Anthony's *Photographic Bulletin*, 1887.)

###### No. 1.

Neutral oxalate of potash .. .. 25 parts  
Nitric acid .. .. 1 drop  
Distilled water.. .. 100 parts

###### No. 2.

Ferrous nitrate.. .. 25 parts  
Distilled water .. .. 100 "

For use add one part of No. 2 to five parts of No. 1. This is stated to be more active than the ordinary oxalate developer.

###### 2. Lord's Improved Oxalate Developer.

Neutral oxalate of potash .. .. 35 parts  
Distilled water.. .. 150 "

Dissolve and add—

Sodium sulphite .. .. 10 parts

Then add—

Ferrous sulphate .. .. 15 parts  
Dissolved in distilled water .. .. 50 "

And finally—

Sulphuric acid .. .. 1 part

This developer is said to keep well and be very vigorous.

###### 3. Edwards' Formula.

###### No. 1.

Neutral oxalate of potash .. .. 50 parts  
Ammonium chlorido .. .. 2.25 "  
Distilled water.. .. 500 "

###### No. 2.

Ferrous sulphate .. .. 17 parts  
Citric acid .. .. 8.5 "  
Alum .. .. 8.5 "  
Distilled water .. .. 500 "

For use mix in equal parts. This gives good black tones, especially on Alpha paper.

###### 4. Sulpho-Oxalate Developer.

###### No. 1.

Neutral oxalate developer .. .. 25 parts  
Distilled water .. .. 100 "

###### No. 2.

Ferrous sulphate .. .. 25 parts  
Sulphuric acid .. .. 1 part  
Distilled water .. .. 100 parts



For use mix four parts of No. 2 with twenty parts of No. 1, then add—

Sulphurous acid .. .. . 3 parts  
This gives rich blacks, especially on Alpha paper.

#### HYDROQUINONE DEVELOPERS.

##### 1. Eder and Lenhard's.

###### No. 1.

|                         |          |
|-------------------------|----------|
| Hydroquinone .. .. .    | 10 parts |
| Sodium sulphite .. .. . | 40 "     |
| Acetic acid .. .. .     | 15 "     |
| Distilled water .. .. . | 400 "    |

###### No. 2.

|                             |          |
|-----------------------------|----------|
| Potassium carbonate .. .. . | 20 parts |
| Distilled water .. .. .     | 200 "    |

For use mix forty parts of No. 1 with twenty parts of No. 2.

##### Dr. Just's Developer.

###### No. 1.

|                         |           |
|-------------------------|-----------|
| Hydroquinone .. .. .    | 10 parts. |
| Sodium sulphite .. .. . | 60 "      |
| Distilled water .. .. . | 240 "     |

###### No. 2.

|                             |            |
|-----------------------------|------------|
| Potassium carbonate .. .. . | 120 parts. |
| Acetic acid .. .. .         | 15 "       |
| Distilled water .. .. .     | 480 "      |

Mix the solutions in equal parts for use. The best results are obtained by commencing development with an old or once used developer, and when development is half completed, applying fresh.

##### 3. One-Solution Developer.

|                                  |          |
|----------------------------------|----------|
| Hydroquinone .. .. .             | 6 parts. |
| Sodium sulphite .. .. .          | 60 "     |
| Sodium carbonate .. .. .         | 60 "     |
| Eosin .. .. .                    | 0.06 "   |
| Distilled water, to make .. .. . | 250 "    |

For use dilute with four times the quantity of water, and add a few drops of 10 per cent. solution of bromide of potash as restrainer.

#### PYRO DEVELOPERS.

##### 1. For Brown Tones.

###### No. 1.

|                         |           |
|-------------------------|-----------|
| Sodium sulphite .. .. . | 60 parts. |
| Pyrogallol .. .. .      | 10 "      |
| Distilled water .. .. . | 160 "     |

###### No. 2.

|                          |           |
|--------------------------|-----------|
| Sodium carbonate .. .. . | 30 parts. |
| Distilled water .. .. .  | 800 "     |

###### No. 3.

|                           |           |
|---------------------------|-----------|
| Potassium bromide .. .. . | 10 parts. |
| Distilled water .. .. .   | 60 "      |

For use mix one part of No. 1 with five parts of No. 2, and add a few drops of B.

##### 2. EDWARDS' REDEVELOPER.

##### For Black Brown Tones.

###### No. 1.

|                          |            |
|--------------------------|------------|
| Pyrogallol .. .. .       | 4.0 parts. |
| Ammonium citrate .. .. . | 1.3 "      |
| Or citric acid .. .. .   | 1.0 "      |
| Distilled water .. .. .  | 100 "      |

###### No. 2.

|                             |          |
|-----------------------------|----------|
| Liquid ammonia '880 .. .. . | 6 parts. |
| Ammonium bromide .. .. .    | 11 "     |
| Distilled water .. .. .     | 100 "    |

For use mix in equal proportions, and dilute with an equal quantity of water. This is more especially useful for enlarged negatives and opals. To the latter it imparts a pleasing purple when these are to be viewed by transmitted light.

#### EIKONOGEN DEVELOPERS.

##### 1. Dr. Just's Developer.

|                          |           |
|--------------------------|-----------|
| Distilled water .. .. .  | 60 parts. |
| Sodium sulphite .. .. .  | 20 "      |
| Sodium carbonate .. .. . | 15 "      |
| Eikonogen .. .. .        | 5 "       |

Dissolve in the order named, and add potassium bromide as required for restraining.

##### 2. Beach's Developer.

###### No. 1.

|                                 |          |
|---------------------------------|----------|
| Eikonogen .. .. .               | 1 part.  |
| Sodium sulphite crystal .. .. . | 2 parts. |
| Distilled water .. .. .         | 25 "     |

###### No. 2.

|                             |           |
|-----------------------------|-----------|
| Potassium carbonate .. .. . | 10 parts. |
| Distilled water .. .. .     | 25 "      |

For use mix 60 parts of No. 1, 3 parts of No. 2, and 20 parts of water.

#### THE ACID FIXING BATH.

The use of the acid or acid and alum fixing bath will be found of value after developing with hydroquinone, eikonogen, or pyro, and also with ferrous oxalate development for papers inclined to blister, and for opals and enlarged negatives. Such an addition was proposed first by Berkeley, but it attracted but little notice till revived by Herr Lainer in 1889. The formula for the acid fixing bath is as follows:—

Solution of hypo. (1.4) .. .. . 1,000 parts.

Acid sulphite lye .. .. . 50—100 parts.

The acid sulphite lye is a solution of acid sulphite of sodium made by supersaturation of a solution of caustic or carbonate of soda, and contains the acid sulphite or bisulphite of sodium  $\text{NaHSO}_3$  with considerable quantities of free sulphurous acid. The sulphite lye may now be obtained commercially, but may be replaced by the following solution:—

Sodium sulphite .. .. . 17 parts.

Distilled water .. .. . 70 "

Dissolve and add—

Tartaric acid .. .. . 15 parts.

Dissolve in distilled water .. .. . 30 "

This quantity is sufficient for

Solution of hypo. (1.4) .. .. . 1,000 parts.

It sometimes happens that sulphur is deposited, and the bath becomes cloudy, and we therefore prefer to use the following proportions:—

Sodium sulphite .. .. . 20 parts.

Distilled water .. .. . 70 "

Dissolve and add—

Tartaric or citric acid .. .. . 10 parts.

Dissolve in distilled water .. .. . 30 "

And add to

Solution of hypo. (1.4) .. .. . 1,000 parts.

#### THE ALUM FIXING BATH.

If a solution of alum be added to a solution of hypo. the mixture becomes cloudy, and sulphurous acid is set free, and aluminium oxide and sulphur precipitated.

$3 \text{Na}_2\text{S}_2\text{O}_3 + \text{Al}_2(\text{SO}_4)_3 = \text{Al}_2\text{O}_3 + \text{S}_3 + 3 \text{SO}_2 + 3 \text{Na}_2\text{SO}_4$ , but if the alum be mixed with solution of sodium sulphite no such action takes place. The proportions recommended by Herr Lainer, to whom the observation is first due, are as follows:—

Saturated solution of alum .. .. . 1,000 parts.

" " sodium sulphite 300 "

Solution of hypo. 1.4 .. .. . 1,000—1,250 parts.

This mixture should be quite clear, and may be used at once.



## EMULSION FOR BROMIDE PAPER AND OPALS.

Those workers desirous of preparing their own bromide paper and opals will find the following directions useful.

Dr. Eder states that "the emulsion for positive prints should work slowly have little sensitiveness, should be completely free from fog, and give delicate details. This is best obtained by means of an emulsion, which contains plenty of iodide of silver, is not strongly ripened, and contains plenty of gelatine." He suggests the following:—

*No. 1. For Black Tones.*

|                           |           |
|---------------------------|-----------|
| A. Ammonium bromide .. .. | 20 parts. |
| Gelatine .. ..            | 50—80 "   |
| Distilled water .. ..     | 400 "     |

Allow the gelatine to soak in the water for twelve hours, then dissolve at a temperature of 50—60 deg. C. and add the bromide; then in the dark-room add gradually, with constant and violent shaking, the following solution heated to 50—60 deg. C.:—

|                       |           |
|-----------------------|-----------|
| Silver nitrate .. ..  | 30 parts. |
| Distilled water .. .. | 400 "     |

Allow the solutions to stand from half to one hour, and then pour out into a flat dish to set. When thoroughly set break up into small pieces, and wash in the usual manner.

*No. 2. For Brown Tones.*

|                           |           |
|---------------------------|-----------|
| A. Ammonium bromide .. .. | 18 parts. |
| Potassium iodide .. ..    | 2—4 "     |
| Gelatine .. ..            | 50—80 "   |
| Distilled water .. ..     | 400 "     |
| B. Silver nitrate .. ..   | 30 "      |
| Distilled water .. ..     | 400 "     |

The directions for making the same as above. This (No. 2) emulsion gives dark brown tones with ferrous oxalate. If 20 parts of citric acid be added to No. 2 A the tone is brighter. If the citric acid be omitted, and 4 parts of ammonia be added instead, the tone is a darker brown.

Full directions for the preparation of the paper, support, and coating of the same will be found in "The Dictionary of Photography," or Abney's "Photography with Emulsions," or Dr. Eder's "Ausführliches Handbuch der Photographie," vol. iii., pp. 360—380.

## Letters to the Editor.

## PERMISSION TO PHOTOGRAPH.

SIR,—I am pleased to see in your issue of May 27th a letter signed "Architecture." This letter should go home to many professional photographers, as well as those who sell amateurs' rights.

I should like to know why we should be stopped from entering public free grounds, and taking photographs, as we are at some? Is it reasonable, because some local professional gains a right through paying a small fee, that we amateurs should be excluded from a little enjoyment, for which we should be quite as willing to pay, and perhaps more so, than the professional? What amateur would not take up arms against such proceedings? It also seems that the professional is doing himself more harm than good by, shall I say, this greedy monopoly. Why do so many professionals make stumbling-blocks for themselves of us, especially in small towns, such as the one uppermost in my mind, in which are many excellent amateurs?

Perhaps this letter may reach the eyes of some others who have been kept away from athletic sports and such like, who have had to climb on to house-tops and such places to get often a very distant "shot" at what may be, in their own native towns and villages, such a sight that they, perhaps, will never be able to take again.—Yours, etc.,

NETTLED AMATEUR.

\* \* \* \*

## EXETER AMATEUR PHOTOGRAPHIC SOCIETY.

SIR,—Now that the tourist season has commenced, it may interest those of the fraternity who are passing through Exeter, to know that we have acquired a reading and a dark room—the

latter fitted up with every convenience—which we shall have very great pleasure in placing at their disposal free. Application for the use of these should be made either to myself or to the Hon. Treas., Mr. J. Hinton Lake, Chemist, High Street.—I am, etc.,

JNO. SPARSHATT (Hon. Sec.)

\* \* \* \*

## PRIZE MEDAL EXCURSIONS.

SIR,—May I suggest that you should so far vary your Monthly Competitions, and thereby materially add to the debt which amateurs already owe you, by offering a set of medals for prints taken by members of a Society, at a Society excursion, during the current year?

It is, I suppose, hardly necessary to dwell upon the value and uses of concerted rambles, but should there be any doubt on this score the mere fact of an association such as the Amateur Field Club being so flourishing and including in its ranks such distinguished photographers is surely demonstration enough.

Anyhow, admitting the advantage of such fixtures, it is regrettable that in many cases out-door meetings are either not efficiently organised by executives, or are not well attended by members. In saying this I do not speak feelingly, because here in Croydon, for various reasons, we enjoy probably a larger proportion of photographic jaunts than is the case in most other centres; but I feel that unless the many useful and promising societies devoted to photography throw more energy into their summer work, a considerable proportion of them will not improbably expire of prolonged stagnation, to prevent which would, I venture to think, be well worth your consideration.

Perhaps others who have the welfare of photographic societies at heart will endorse my proposition, or propose some still more effective stimulus. In any case whether or not you see your way to offering medals as above indicated, I hope this letter may evoke suggestions whereby that dangerous torpor which during the warm weather overcomes so many societies may be shaken off.—Yours, etc.,

HECTOR MACLEAN.

\* \* \* \*

## CITY AND GUILDS EXAMINATION.

SIR,—In answer to "Honours Grade" I must say that I certainly did not intend to make my letter at all personal. In your article based on "Honours Grade's" information you say the arrangements were careless in the extreme. People who were not at the examination might take this to mean that the examination itself was carelessly conducted, and that the students were not properly attended to by the superintendent. That is what I took it to mean. I certainly did not think your remarks were levelled at Mr. Dollond only, but I did think perhaps a share of them were meant for him, and I am glad to find I was mistaken. "Honours Grade" thinks that talking is unnecessary. I cannot agree with him there. Where nineteen people are together, a certain amount of talking is necessary in the way of politeness, especially in the dark-room, where it is a very easy thing to tread on people's toes in the semi-darkness. "Honours Grade" wishes to know if I am capable of forming an adverse opinion as to what has been said in regard to the Honours Grade Examination? Not having gone in for it, and knowing no one who did, I certainly am not; but should say that if it was as well conducted as the Ordinary Grade was, I certainly should not form an adverse opinion. In conclusion, I think it is now purely a matter of personal opinion as to whether the results of such an examination are useless or not.

WILLIAM FRANCIS MARTIN.

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## Elementary Photography.

BY JOHN A. HODGES.

## CHAPTER XX.

## SHUTTER EXPOSURES.

Popular Ideas—Time Exposures Preferable to Shutter Exposures—Necessary Conditions—Shutters—Advantages of the "Blind" Type—The Lens—Apertures—The Plate—Subjects—Necessary Precautions—Actual Work—Sunlight versus Diffused Light—View Finders—Development—The Writer's Plan Described—Plain Pyro Preferable—The Preliminary Bath—Procedure—Errors to Avoid—The "Tentative" Plan—How to Prevent Staining the Film—Detective Cameras—Advice.

WITH the non-photographic public the impression seems to prevail that all photographs are now taken by what is termed the "instantaneous process." I am constantly



being asked whether I am using the "instantaneous process," and when I reply in the negative, I often fancy I can detect a look of incredulity on the part of my questioner. I would at once say that when possible I prefer to give a time exposure, and I would strongly recommend the beginner to adopt the same system, and at any rate not attempt shutter work until he is able to produce good negatives from time exposures. Of course, there are occasions when the use of a shutter is imperative, but, on the other hand, it is often used when there is no necessity for its employment, and when a better result would be achieved by giving a time exposure. Shutter exposures, if successful work is looked for, should only be attempted, at any rate by the tyro, under favourable conditions. The light must be good, the lens must be rapid, and the plate rapid also. It should be borne in mind too that in shutter work everything is, so to speak, strained—the lens, the plate, and the developer.

The first matter to receive consideration is, naturally, the so-called instantaneous shutter. The number of shutters which have been invented, and the ingenuity which has been expended upon their construction, are matters which must excite the wonder of even the most superficial observer, and it is very far from being my intention to attempt an even brief account of shutters in general. Many of them are exceedingly ingenious from a mechanical point of view, but altogether useless for the purposes of the practical photographer. The manufacturers of detective cameras are at the present day vying with one another in a mad race after rapidity, with the result that from a *practical* point of view many shutters are far too quick for the plates. Except for scientific work, and under exceptional circumstances, extreme rapidity is not necessary; indeed, the shutter should always be set at the slowest speed which the movement of the subject will permit. For general work of this class an elaborate instrument is by no means necessary. I shall doubtless surprise many of my readers when I state that nearly all my own rapid work is done with a blind-shutter, costing but a few shillings, and actuated simply by pulling a cord. With it I find it quite possible to give exposures of less than the 1-30th part of a second, and for artistic photography it is seldom necessary to give so high a speed. I find I can successfully take with it such subjects as boats sailing, groups of moving figures, animal studies, etc., though no doubt if I attempted to secure photographs of galloping horses, flying bullets, express trains, etc., it might be found wanting. But except as scientific records such photographs are without value, and as the means of obtaining them scarcely comes within the scope of an elementary text-book, I do not propose to further discuss the subject here. For cloud effects the blind shutter is particularly adapted, as the sky receives less exposure than the foreground, so that in many cases it is possible to secure a good sky effect and a properly-exposed landscape in the same negative. I have, therefore, no hesitation in recommending the beginner who wishes to try his hand at shutter exposures to purchase one of these simple shutters, or if he prefer to have a more costly instrument he cannot do better than buy one of the Ker-shaw pattern.

The next matter to which attention should be directed is the lens. This should be of the rapid rectilinear form, and, at any rate until some experience in developing shutter-exposed plates has been gained, it should not be worked at a less aperture than  $f/11$ , unless the light happen to be exceptionally good.

The plate remains to be considered, and its selection is a most important matter. Hitherto I have recommended the reader—at any rate, for general purposes—to use a plate

of medium rapidity, and even for the work now under consideration I do not advise the beginner to select the most rapid plates obtainable. For the kind of subjects which we are contemplating—animals, river or sea views, with moving boats, etc., groups of people, and so on—a plate of medium rapidity should be selected. It will be found sufficiently quick for the purpose, and will be far more easy to work than the ultra rapid kinds, which require no inconsiderable skill on the part of the operator to produce really good negatives upon. If quick plates are used, they should not be exposed to the light of the dark-room for a longer period than is absolutely necessary, for not only will they be more easily affected by the light, but an amount of light fogging that would be inappreciable on a plate which had received a time exposure might quite spoil a shutter-exposed one.

If failures from insufficient exposure are to be avoided, shutter exposures should only be attempted in a suitable light. The most favourable time of the year is in the month of June, when the light is at its best. Strong sunshine does not always give the best results, for if the sun be behind the camera, flatness generally results, and if it be to the right or left, the cast shadows are sometimes very heavy; and negatives taken under such conditions—that is to say, showing strongly marked contrasts of light and shade—are very difficult to develop successfully, because the brilliantly-lighted portions of the picture develop up quickly and attain an undue amount of density before the detail can be brought out of the shadows, and a hard and crude print is very often the result. There are many days when the light is very bright and actinic, although the sun may not be actually shining, and such occasions will be found best for this kind of work. Days when heavy masses of white cloud are floating about, and at times partially obscuring the brilliancy of the sun, are also very suitable, particularly when marine or river work is being undertaken. The nearer the moving object is to the camera, the quicker the exposure that will be necessary, and in order that the photographer may know the proper moment at which to make the exposure, a "finder" should be attached to the camera. The simplest and best form is that known as the "Aptus," which consists of an ordinary bi-concave lens mounted in a light frame. The image can always be distinctly seen in this form of finder, whereas with the box, or camera obscura form, it is difficult to see the image if the light be bright. Many good effects are lost, or at any rate marred, by indecision in making the exposure. "He who hesitates is lost" should certainly be the maxim of the photographer, and directly the desired composition or effect is seen reflected in the finder the exposure should be made without further hesitation.

The development of a plate which has received a very brief shutter exposure is naturally a more difficult matter than the development of one to which an approximately correct time exposure has been given, and in order to get the best results some modification of the developer will be necessary. The method I adopt (and I find it succeeds well with most plates) is to soak the plate in a weak alkaline solution previous to applying the developer. I measure out 20 minims of the 10 per cent. solution of ammonia, and place it in a clean measure, adding two ounces of water. After stirring the solution I pour it over the plate, and allow it to soak therein for about ten minutes, the dish being covered with a piece of cardboard. I prefer to use for this kind of work a plain pyro developer, for I find it gives better gradation and more detail than one containing a preservative. Two grains of *dry pyro* should be placed in the measure and dissolved in two ounces of water, 20 minims of the 10 per cent. ammonia solution, and 20 minims of the 10 per cent. bromide solution being added. The deve-



loper should be thoroughly mixed by stirring, and (the weak alkaline solution in which it has been soaking having been thrown away) applied to the plate. Now the secret of success in developing negatives which have received shutter exposures is patience. The first impulse will be to put a lot of accelerator in the developer with a view of forcing out the image. This, however, would be a great mistake, and the tentative or gradual system of development should not be departed from. The plate should be gently rocked in order to prevent the formation of a mottled appearance on the negative, which is liable to occur if the developer be not kept in motion.

In about three to five minutes the image should appear and development should be allowed to proceed as far as possible without adding more ammonia. If, however, the image does not gain in detail, 10 minims of ammonia and 5 minims of bromide may be added. The solution during this time will have become more or less dark in colour, and will to some extent stain the negative; if it becomes very dirty, a fresh developer of the same strength should be mixed, and before applying it the plate should be rinsed under the tap. If development flags, cautious additions of ammonia may be made from time to time with half the quantity of bromide, but the point to be observed is to allow each addition sufficient time to do its work. In some cases it may take half an hour, or even longer to develop a shutter exposed plate.

Beginners are sometimes recommended to commence with a detective camera, and, unfortunately for photography and for themselves, they frequently follow the advice. A detective camera in the hands of a novice is both a delusion and a snare. I have met a great many amateurs who have commenced in this way, but I have not met one who has succeeded in producing unaided, even passable results. The truth is that successful work with a detective camera is not such an easy thing as it looks, and it requires no inconsiderable practice and knowledge before it can be used with a certainty of producing good results; therefore I would strongly advise the beginner to defer the purchase of one until he has obtained some experience in working with an ordinary camera mounted on a tripod, and can turn out decent negatives with a reasonable amount of certainty.

## Some Conditions Influencing the Welfare of Photographic Societies.\*

BY W. H. HARRISON.

A PHOTOGRAPHIC organisation may be prosperous in its intellectual capacity, or it may be prosperous in its funds and the number of its members; it may also be prosperous in both. When it is but materially rich, a local society may go quietly and comfortably on its way, and be little esteemed outside the limits of its own parish; when, however, its intellectual powers add considerably to the progress of photographic art and science, its discoveries attract the attention of the world.

That a local society should raise itself above the dead level of the general run of such organisations, it is necessary that each individual member, when time and opportunities permit, should take up some special work, and afterwards place the results before the whole body of the members. In reading the records of the average proceedings of local photographic societies, one would suppose that none but silver and a few other processes existed, and that we have nothing to talk about at our meetings but the working of common processes connected with the plates, films, and papers ordinarily sold in commerce. What is wanted is, that one member shall say, "I will carry on novel photographic researches with the salts of iron," that another shall resolve to do the same with uranium salts, that others shall experiment with the salts of nickel, cobalt, and other metals; that one member shall take up the primuline process

and discover its possibilities, and so on, so as to get away from the more common processes, and to discover new things about the others. We should also have men quitting the beaten track in matters artistic; the finest artistic effects in photographic printing are, I think, produced by Klic's—better known as the "photogravure"—process, yet where is the amateur who works the same? Dr. Emerson announced his intention of beginning to work at it, but I have not yet heard of the results.

I do not believe in appointing committees to conduct such investigations, from a pious sense of duty and a mere belief that the work ought to be done. It is for the individual to strike out new paths, not as a task but as a pleasure; it is for each of our younger members to resolve to no longer live as a nonentity, but to do something to increase the store of human knowledge, and to stand out as a benefactor of the race.

What dreary reading is to be found in the local society reports in the photographic press. We are perhaps informed therein that Mr. Jones sat down amid loud applause after reading a valuable paper in which the reporter can find nothing worth printing. Sometimes we are told how J. Smith, Esq., J.P., a man knowing nothing of photography, honoured the photographic society of Little Pedlington with his presence, and how all the members grovelled before him. I think that the editors of all the photographic papers will thank me for speaking of the lack of general interest and of useful information in the average reports of the local societies; they cannot well leave the reports out, because their circulation might then fall in the various localities. Let then some of the energetic young men connected with this club bring in some results of original research, and make the reports of our proceedings worth reading. The Club has the advantage of possessing as President a physician of high attainments, who can appreciate the value of original research by the members, and who himself does not much follow beaten tracks in photography. A President who does not feel satisfied unless he can set up his own camera in the crater of an active volcano such as Hecla is sure to encourage all those members who begin to strike out new paths of experimental investigation.

One of the largest and most prosperous local photographic societies in the kingdom is the Manchester Amateur Photographic Association, and I was told at one of its meetings by one of its most active members the lantern displays and lectures, to which the public were admitted for a trifling fee, had great influence in bringing in new members and increasing its popularity. Close at hand we have a busy centre of traffic and commerce, and if next winter we advertised lantern entertainments for the display of instantaneous photographs of scenes near Brixton station, they would probably "draw," as, apart from other considerations, so many persons would be curious as to whether they or their houses had been pictured.

A good library furnishes an inducement to join a photographic Society. The Camera Club has a good library, and the Photographic Club a moderately good one; those of all other photographic societies of London are, so far as I know, poor in the extreme. Perhaps we shall be long before possessing a good library, but the central free library is now being built close by the spot on which we are now assembled. It might be well if this Club memorialised the authorities thereof, to the effect that the collections of chemical and photographic books they have already placed in the branch libraries are so poor as to be beneath contempt, and that they may as well possess one decent collection of scientific works and books of reference, so that people shall not be obliged to journey hence to the British Museum or the Patent Office libraries, because of the literary poverty of our own locality.

A good honorary secretary is essential to the welfare of every photographic society; he is to the society what the lens is to the camera; he is the official means of communication with the outside world, and if he be intellectually dim, woeful will be the results to the organisation he represents. He has to do all the hard work, and is forgotten while everything goes on well; when things begin to go wrongly, he has to bear all the abuse. When you smite him on the one cheek he has to turn to you the other also, and when there is a deficiency in the accounts he has to cheerfully make up the balance out of his own pocket. We cannot too much honour such laborious and long-suffering individuals: I think that it is the duty of the wealthier members of the photographic community in London to "dine" all the photographic honorary secretaries once a month. Had Mr. Louis M. Biden adopted this plan before he attempted to federate all the London photographic societies in hot haste, he might have been more successful in carrying out his plans. One stands appalled at the magnitude of the knowledge of the public aspects of photography in London which would be concentrated at a meeting or a dinner party of the organising secretaries of the various organisations.

Exhibitions, summer outings, and other incidents of existence have their influence on the welfare of photographic organisations, but enough has been said upon this subject for one evening, and we will now give attention to Mr. Warnerke's lantern slides.

\* An address delivered at the Brixton and Clapham Camera Club as a prefatory notice to an exhibition of the lantern pictures taken by Mr. Leon Warnerke, of government and other photographic establishments in Continental Europe.



## ILLUSTRATED SUPPLEMENT,

JUNE 17, 1892.

## Monthly Competition, No. 36, "Sea Pieces and River Scenery."

ALDOUS, H. (Southsea).—"Pay-day on Board." Lancaster's Instanto, full aperture; instantaneous, May 4. "Rainy day with occasional sunshine, noon." Fearfully over-printed.

ALFORD, E. J. (Brighton).—"Hastings Fishing Quarter." Optimus, Portable symmetrical,  $f/16$ ; 1-5th sec., September, blue sky, cloudy, 12.30; Ilford ordinary. Too much foreground, and a disappointing view of this spot, which is so full of pictures.

ALLEN, T. G. F. (Sheffield).—"River Don." Optimus R.R.,  $f/32$ ; 2 sec., May, hazy, sunshine, 4 p.m.; Castle. Utterly spoilt in printing.

ANDERSON, W. (Edinburgh).—"A Picturesque Bit." Rectigraph (Lancaster), 6 in. focus,  $f/16$ ;  $\frac{1}{2}$  sec., with Ilford Iso. and screen, May, bright sunlight, 12 noon; developed pyro and soda, no bromide; Ilford rapid bromide paper, developed ferrous oxalate. Over-developed and all idea of sunshine lost.

ANNESLEY, Miss E. (London).—"Torbay." Dallmeyer,  $f/11$ ; 1-16th sec., May, sunlight, 4 p.m.; Ilford rapid. Over-printed, and too much foreground.

ARNOLD, J. O. (Sheffield).—"A Cloudy Afternoon on the Conway." Wray's R.R.,  $f/22$ ; 1 sec., July, cloudy with intermittent sun, 4 p.m.; Castle; matt silver paper, not toned. "Not retouched or dodged. Landscape and clouds on same negative. In this picture I have deliberately violated artistic rules by placing the principal group of bushes in the centre." A very charming result, and highly commended.

ASHTON, A. H. (India).—"Temples on the Jumna." Ross' R.S., 10 by 8; 2 sec., April, bright, but distance hazy, 8 a.m.; Wratten's ordinary. Just a trifle over-printed, and an inch and a half could be spared from left-hand side.

ASHTON, A. H. (India).—"Temples on the Jumna." Ross' R.S., 10 by 8; 2 sec., April, bright, but distance hazy, 8 a.m.; Wratten's ordinary. Just a trifle over-printed, and an inch and a half could be spared from left-hand side.

AVERY, W. (Dulwich).—"Fowey River." Lancaster's quarter-plate Instanto.,  $f/20$ ; 2 sec., September, medium light, 2.30 p.m.; Thomas' extra rapid. Too panoramic in character to be a picture.

BAILEY, A. E. (Leytonstone).—"Where Twines the Stream." Beck R.R., 9 in focus,  $f/22$ ;  $\frac{1}{2}$  sec., April, sunlight, 12.45; half-plate Ilford ordinary; platinotype (new A.A. paper), cold bath. The water is far too white, and two figures paddling could have made a picture.

BALL, F. R. (London).—"A Cloudy Day, Rothsay." Instanto.,  $f/10$ ; instantaneous, April, good light, but cloudy, morning, 10 o'clock; Castle; platinotype, hot bath. More resembles midnight than aught else; a very poor print.

BARNFATHER, W. (Stafford).—"Rudyard Lake." American Star R.R.,  $f/22$ ;  $\frac{1}{2}$  sec., April, weak sunlight, 3 o'clock; Barnet. Over-printed, and too many straight lines.

BAXTER, G. (Birmingham).—"Barmouth." R.R., 12 in. focus,  $f/11$ ; shutter exposure, about  $\frac{1}{2}$  sec., July, good light, sunshine at times, with heavy clouds, 3.5 p.m.; Ilford rapid. Over-printed, too much foreground, and shows unequal markings.

BEARD, A. (Newcastle-on-Tyne).—"On the Cam." Optimus Eury-scope,  $f/16$ ; 4 sec., July, dull light, 2.30 p.m.; Ilford ordinary. Under-printed and over-toned; a very poor print of King's famous bridge.

BELL, W. (Northallerton).—"River Thell." Ross' R.S., 2,  $f/11$ -22; 2 sec., September, dull light, 10.30 a.m.; Ilford ordinary. "Light very bad for such a subject, nearly a mist. Commenced to rain before I moved camera." A very bad print. On each side are heavy banks of trees, the outlines of which lead to the centre of the picture, where there is a tower, and the reflections in the water tend exactly the same way.

BIBBY, W. H. (Blackburn).—"A Breezy Day at Blackpool." R.R.; 1-10th sec., September, 1891, dull, showery



No. 1.]

"ON THE TARRANT."  
[SILVER MEDAL.]

[G. Sotton-Symons.

day, 12.30 p.m.; hydroquinone; Ilford ordinary plate. "Printed in dull light." Over-printed and all brightness is lost.

BIRD, D. S. (Cheam).—"The Factory Pool." Optimus, 7 by 5 R.R.,  $f/22$ ;  $\frac{3}{4}$  sec., April, sun shining, midday; Marion's ordinary (backed); bromide. If a larger stop had been used, the distance would have been thrown slightly out of focus and considerably improved it.

BLACK, J. E. (Peebles).—"Picnic Corner." R.R.,  $f/20$ ; 4 sec., April, good light, 3 p.m.; Ilford extra rapid. "Taken with Shew's Eclipse hand-camera. Negative developed with pyro and ammonia." Far too deeply printed, and the bits of trees are offensive.

BLACKWELL, G. W. (Sheffield).—"On the Rivelin." R. half-plate,  $f/16$ ; 10 sec., May, dull light, 6.30 p.m.; Ilford ordinary. Far too deeply printed.

BLYTH, R. H. (Durham).—"Old Bridge at Drumcraef." Ross' R.S., No. 3; 12 sec., November, diffused light, 3.30 p.m.; Wratten ordinary. Part of the old bridge only, we should say. A very inartistic result.

BOOTH, J. A. (Reading).—"Nuneham, Evening." Dallmeyer's R.R., 100; Thomas' thickly coated landscape; 10 sec., dull light, but



clear, and rain clouds (blue) overhead. This print shows very careful technical work, but an inch and half could well be spared off the foreground.

BORSLEY, A. (Clapham).—"Eynsford, River Darent." R.R., 7 by 5,  $f/16$ ; about 2 sec., end of June, good light, rather cloudy, about 6 p.m.; Ilford ordinary; Ilford slow bromide.

BOWRING, A. (Liverpool).—"A Brook near Monsal Dale." Taylor's R.R.,  $f/32$ ; 5 sec., April, bright light, but shady, about 3 o'clock; Ilford ordinary. Another midnight scene, from over-printing.

BRADWELL, MISS AGNES (Lincolnshire).—"River Wey, Guildford." R.R.,  $f/16$ ; 2 sec., April, moderate light, 12.30 p.m.; Castle. "Fourteen months' worker. I was undecided, in exposing this, whether I ought to remove back of lens or not. Do not hope for a prize, but shall be glad of criticism. The attraction of the view was the strong reflections." The lines of the wall, path, and trees on the left all run to the same point, the reflections do likewise, the right-hand side has same fault; the foreground, which should have been sharp, is fuzzy; and the right-hand corner wants breaking up by cattle or a boat; over-printed.

BRAND, JOHN (Perth).—"Garry Bridge." Wide-angle,  $f/30$ ; 6 sec., May, fairly good light, but heavy, dark clouds above (heavy rain shower followed), mid-day; Ilford ordinary. "The light was not very favourable, as a long exposure was necessary in order to bring out the details on the river banks." A very difficult subject and a poor result.

BRIGHTMAN, C. (Bristol).—"A Somersetshire River." Optimus R.R.,  $f/32$ ; 4 sec., April, sunlight, about mid-day, Thomas' extra rapid. Printed far too deep, and wants life.

BRIGHTMAN, H. E. (Bristol).—"East Lynn, North Devon." Perken's R.R.,  $f/64$ ; 6 sec., April, bright morning, 11.30; Thomas extra rapid. "Plate developed with pyro and ammonia, with extra amount of bromide. No retouching." Too flat, and not improved by the pink tone.

BROCKLEBANK, B. (Lancaster).—"Arle Beck, Caton." Invicta,  $f/25$ ;  $1\frac{1}{2}$  sec., May, sunshine, 1 p.m.; Ilford rapid Red Label half-plate; Dr. Jacoby's collodion paper, toning and fixing combined. The white bridge is offensive, and the print wants sunshine.

CARTWRIGHT, B. O. (Radley).—"La Rosière, Jersey." Lancaster's Instanto.,  $f/16$ ; about  $\frac{1}{2}$  sec., April, bright light, 3.50 p.m.; Paget xxxxx. "Have only been a four months' worker." Considerably over-printed, but a very good result for such a young worker.

COLEMAN, G. A. (Hull).—"On the Conway." Wray's R.R.,  $5\frac{1}{2}$  in. focus,  $f/22$ ; 150 sec., June, good light, but declining, half an hour after sunset (8.45); Thomas' Cyclist quarter-plate. "Taken on a very still evening." This competitor should read Mr. Horsley Hinton's remarks on trees in last week's issue.

COOK, J. H. (Cheshire).—"Lower Lighthouse, Hoylake." Ross's P.S.,  $f/32$ ; cap off and on, June, good light, 5 p.m.; Barnet ordinary; platinotype, hot-bath process. Spoilt in printing; there is no sunshine in the print.

COOK, H. (Scarborough).—"The Derwent, Forge Valley." R.S.;  $1\frac{1}{2}$  sec., May, very bright light, 4.45 p.m.; Ilford ordinary. "Exposure was difficult, as, owing to very bright light, some parts of the valley were completely shaded." Shows careful work, but weak artistically.

COPEMAN, R. W. (Henstridge).—"A Corner on the Waveney at Beccles." Beecher's R.R.,  $f/22$ ; 1 sec., June, diffused light, 3 p.m.; Thomas' E.R. A very good picture might be made of this by the aid of clouds and a little judicious trimming.

COVENTRY, H. G. (Darlington).—"On the Tees, near High Force." Swift's Paragon,  $f/15$ ; 4 sec., April, bright sunlight, 12.30; Thomas' slow landscape; plate developed with pyro and ammonia. The whole of the left side of print wants shaving.

CRAETREE, J. H. (Rochdale).—"Swallow Falls, River Uggwy." Landscape single,  $f/11$ ;  $\frac{1}{2}$  sec., July, sunshine, 2 p.m.; Ilford ordinary; Celerotype, tungstate of soda and gold chloride. Over-printed and over-toned and badly trimmed.

CRAIK, J. W. (Forfar).—"At Balquhider, N.B." Lancaster's combination,  $f/16$ ; 3 sec., April, medium light, 1.30 p.m.; Castle; bromide Eastman paper, 45 sec. exposure. Utterly spoilt by too much development.

CRAWFORD, F. (Dublin).—"Sorrento." Fallowfield's R.R. Facile hand-camera,  $f/16$ ; about  $\frac{1}{2}$  sec., February, sunshine, noon; Paget xxxxx. A very soft and pleasing print, but weak on the right-hand side.

CREWE, F. (London).—"Kingsgate Castle." Lancaster's Instanto.,  $f/32$ ; 2 sec., July, diffused light, 4 p.m.; Thomas's Pall Mall; rather dull weather, cloudy. A very poor print. There is nothing at all on the left hand of print, though there ought to be sea and sands.

CROOK, B. (Skipton).—"View on the Wharf." Lancaster's Inst.,  $f/20$ ; 2 sec., August; very wet day, but strong light while exposure was made, 11 a.m.; Ilford ordinary. Print over-exposed, and shows a decided yellow tinge.

CROSSLEY, W. L. (Blackburn).—"Nearing Home." R. R.,  $f/8$ ; shutter, Norden flap, August, sunlight, 12 p.m.; Ilford ordinary. A very good print technically, but nothing artistically.

CROZIER, J. W. (Hexham).—"On the Allan." Optimus,  $f/24$ ; 9 sec., April, diffused light, 5.30 p.m.; Ilford ordinary. The bridge line across the centre is very poor.

DALBY, T. (Bradford).—"River Scene, Richmond." French R.R.,  $f/22$ ; 4 sec., July, good light, 5.30 p.m.; Ilford ordinary. A picture might have been made of this, but the bridge cuts the print right in two, and both ends of the bridge are cut off.

DART, W. B. (Torrington).—"Above Bideford Bridge." Swinden and Eap hand-camera; Iso. plates (Edwards), Rodinal developer. A very nice, soft result, but would have been far better without the bridge.

DAVID, M. S. (Fleetwood).—"On the Garvogue." Optimus R.R.,  $f/22$ ;  $\frac{3}{4}$  sec., April, sunshine with clouds, 11 a.m.; Ilford Iso. instantaneous; Ilford P.O.P., Lyonel Clark's platinum; clouds secured on original negative. A very fine effect and highly praised.

DOUGLAS, T. (Gateshead).—"View on the Derwent." Wray quarter-plate R.R.,  $f/22$ ;  $1\frac{1}{2}$  sec., June, sunshine, 9 a.m.; Castle. Printed far too deep, and a lot of uninteresting foreground.

DRIVER, W. R. (Liverpool).—"The Stepping Stones." Underwood's Instantograph,  $f/16$ ; 8 sec., April, poor light, 5.15 p.m.; Ilford ordinary.

A most fearfully flat, poor, and over-toned print of a pretty spot.

DYSON, E. (Ashford).—"Staithes, a Yorkshire Fishing Village." Fallowfield's rapid doublet,  $f/22$ ; about 2 sec., August, bright sunshine, about 11 a.m.; Ilford ordinary. "The negative of the above picture developed with hydroquinone." Far too muddled and patchy in composition.

EDMISTON, W. (Gourock).—"Inward Bound." Single achromatic view,  $8\frac{1}{2}$  in. focus,  $f/16$ ; revolving shutter, April, good light, sun shining, noon; Ilford rapid. "With the exception of a slight intensifying, negative untouched, clouds natural." Printed too deep.

EDWARDS, J. (Bishops Auckland).—"On the Wear." Zeiss' anastigmat, series 2,  $f/25$ ; 5 sec., May, dull and dark, 6.20 p.m.; Marion's (No. 19). "It was not a favourable time, as the river was in flood." The water in the right-hand side is too white, and man is wrongly placed; badly mounted.

ELLETT, H. G. (Jersey).—"Home at Last." Laverne's R.R.,  $f/16$ ; 1-50 sec., May, hazy light, 8.45 a.m.; Mawson. "First shot with Tylar's perfect camera." Over-printed, and wants clouds.

ELTOFT, J. (Lancaster).—"Crook of Lune, near Lancaster." Taylor and Hobson's R.R.,  $f/16$ ; 2 sec., April, bright sunshine,



No. 2.]

"TWO FISHERS."

[W. T. Hawthorn.

[BRONZE MEDAL.]



2.30 p.m.; Ilford ordinary. "It was a very bright day. I am an amateur of only three months." Half an inch too much foreground, too much sky; the whole composition is too much confined to a narrow line in the centre of plate. Shows good technical work.

EPPE, JUN., J. (Upper Norwood).—"On the Medway." Stanley's doublet, middle stop; 4 sec., September, half an hour before sunset, cloudless sky; Wratten's instantaneous (19); Ilford bromide paper, developed slowly. This competitor has violated many well-known rules of composition, and yet has a very effective picture, which lost its place in the first six by carelessness in printing; there is a blaze of light down the left side and the bottom, the water is also a little too white.

FAIRCLOUGH, R. (Preston).—"Peel Harbour and Castle." Optimus R.R., 3 sec., August, bright and clear, about 12.30 p.m.; Ilford ordinary. Utterly spoilt in printing, far too flat.

FARTHING, W. J. (N. Wales).—"Under the Alders." Crouch,  $f/22$ ; 6 sec., April, diffused light, 11.30 a.m.; Ilford ordinary. Over-printed, and a lot of the left-hand side could be spared.

FERGUSON, A. (Islay).—"On the Sorn." Taylor, Taylor, and Hobson,  $f/22$ ; 2 sec., April, sunlight, 1.30 p.m.; Paget Prize xxx. Too much foreground, and lines converge too much.

FIELDING, F. (Blackburn).—"On the Hodder." Underwood's half-plate instantaneous,  $f/22$ ; 2 sec., May, good light, sun under a cloud, 3 p.m.; Ilford ordinary. Wants clouds, and spoilt by the bridges cutting it in two.

FIRTH, R. H. (Dover).—"On the Dour, near Kearsney Abbey." French lens,  $f/32$ , cap off and on; May, sunshine, 8 a.m.; Paget xxx.; bromide print on Ilford slow paper. "A very difficult spot to photograph, except in early morning, as light is in face of camera nearly all day, or else shadows too deep. Developed with pyro and soda." Not a very successful result, and the tone is very curious.

FOSTER, P. S. (Halifax).—"Balianak, on the Nile, Evening." Rapid Sym., Ross' 9 by 7,  $f/22$ ; 2 sec., February, good light, 5 p.m.; Carbutt film; Scholzig matt paper, chlor. plat. of potassium. "Taken in the evening, just before sunset." A very fine effect, but printed just a little too deep, and the lines of the lateen sails lean too much one way.

FRENCH, W. (Middlesex).—"By the New River." Chipper's R.R., Lancaster's Instanto.,  $f/16$ ; 3 sec., May, little sunshine, 4 p.m.; Ilford ordinary. A very poor print, and the railway is not artistic.

FROST, A. G. S. (London).—"Swallow Falls." Lancaster's instanto.,  $f/16$ ; 6 sec., June, good light, 5 p.m.; Trafalgar landscape. Too deeply printed, and the tree branches on the left are bad.

FULTON, J. H. (London).—"Ingleton, Yorkshire." R.R.,  $f/16$ ; 6 sec., August, dull light, after rain, 11 a.m.; Ilford ordinary. Utterly spoilt by the bridge, which cuts right across the picture.

GEAR, J. H. (London).—"Among the Waste and Lumber of the Shore." A good picture spoilt in the printing.

GEORGE, W. H. (Leeds).—"Blue Bridge, Haw Park." Single landscape,  $f/32$ ; 4 sec., April, diffused light, 5 p.m.; Ilford ordinary; bromide. A poor flat print, of no interest whatever.

GIBBS, A. N. G. (Bristol).—"The Squirrel." Single landscape,  $f/11$ ; inst., August, bright sun, 11.30 a.m.; Barnet extra rapid. Over-printed and over-toned.

GIBSON, J., JUN. (Hexham).—"A North Tyne Mill Race." Ross' 3 in. Portable Symmetrical,  $f/64$ ; 3 min., October, evening, diffused light, 4 p.m.; Ilford W. A very clever little print, and highly commended.

GIDDINS, W. J. (London).—"The Fisher's Return." Watson's R.R.,  $f/22$ ; 1½ sec., middle of May, moderately good, 2 p.m.; Edwards's Inst. Iso.; hot-bath platinotype. A good thing utterly spoilt in printing; it is far too black and heavy.

GOSS, A. (Alsager).—"Bangor Ferry." Lancaster's Instan., half-

plate,  $f/10$ ; shutter, November, weak sunshine, 12.30; Ilford rapid, silver, borax. Plate under-exposed, and print over-printed.

GOWAN, W. (Blackburn).—"On the Hodder." Optimus,  $f/32$ ; about 10 sec., August, good light, diffused, afternoon; Ilford ordinary; cold bath platinotype, new paper. Sadly wants clouds and some life in it.

GRACE, MRS. C. S. (St. Andrews).—"Harbour, St. Andrews." French R.R.,  $f/16$ ; 1 sec., March, good light, 4 p.m.; Ilford ordinary. Overprinted, and too many straight lines in it.

GREENE, W. H. (Liverpool).—"Rock and River." Taylor's quarter-plate R.R.,  $f/32$ ; 2½ sec., April, fairly bright light, 1.30 p.m.; Ilford ordinary. Over-printed and over-toned.

GRILLON, A. (Liverpool).—"May Day on the River Alyn." Derogy's,  $f/16$ ; 1 sec., May Day, very good light, no sun, 3.30 p.m.; Ilford ordinary; bromide paper, ferrous oxalate throughout. This would have been improved by a weaker distance, the whole is now jammed close up.

GROVER, B. J. (London).—"Wagner's Wells." Beck R.R.,  $f/16$ ; French shutter, probably ½ sec., September, diffused light, 4 p.m.;

Paget xxxx. The foreground of this is weak, and the print too black on the left-hand side.

GROVES, R. H. (Dorset).—"White Mill on the Stour, Dorset." Watson's R.R.; about 1 sec., May, bright light, 5 in the evening; Ilford. A very good print and highly commended.

GWYNNE, J. H. (London).—"A Storm at Ventnor." Lancaster's W.A.R.,  $f/20$ ; cap off and on, July or August, very dull light, about 6 p.m.; Ilford ordinary; ferro-prussiate. "Very bad light, strong wind blowing." An inch too much foreground, and print a bad one over-printed, and the sea all runs up, though this may be peculiar to Ventnor, especially in stormy weather.

HACK, H. (Kirkcaldy).—"Dunkier Lake." Dallmeyer,  $f/16$ ; 4 sec., March, moderately good light, 2 p.m.; Ilford ordinary; Ilford P.O.P., sulpho-cyanide ammonia. This competitor is requested to read the remarks on Mr. Todd's picture; evidently these two competitors have been working together, as the place is taken from exactly the same standpoint and it is questionable which is the worse print.

HALL, C. G. (W. Brighton).—"Entering Harbour." Optimus R.R.; instantaneous, July, cloudy, 11 a.m.; Paget xxx.; clouds natural, not printed in. A very fair quarter-plate might be cut out of this, the rest is unnecessary.

HALL, MRS. G. J. (West Brighton).—"Off to the Fishing Ground." Optimus R.R.; instantaneous, August, good light, 1

p.m.; Paget xxxxx. This negative wants intensifying, and more careful printing.

HALLETT, C. F. H. (London).—"The Cam, Harston." Perken's R.R.,  $f/24$ ; 3½ sec., April, cloudy, good light, 3.30 p.m.; Ilford ordinary; Ilford P.O.P., sulpho-cyanide. Over-printed and over-toned.

HANSON, A. W. (London).—"H.M.S. *Swiftsure*, Devonport Harbour." French R.R.,  $f/20$ ; cap off and on, first week in Sept., very good light, sun shining, 11 a.m.; Mawson's Castle. A good print, without much artistic merit.

HARDING, G. (Stourbridge).—"On the Severn." Underwood's rectilinear Instanto.,  $f/16$ ; 4 sec., May, subdued light, 7 p.m.; Ilford; bromide. Over-toned, and wants some life.

HARRIMAN, J. (Henley).—"Evening, Pulling Hard against the Stream." R.R.,  $f/12$ ; drop, August, sun behind clouds, 4.50 p.m.; Mawson; Fry's Soltype paper, borax and gold. "Taken right against the light to get the effect. Clouds are in the original negative." A very pretty effect, and a very suitable printing process has been selected.

HARMAN, W. (London).—"On the Tillingsbourne." R.R.,  $f/32$ ; 1 sec., May, sun half out, 4 p.m.; quarter-plate, Ilford White Label; silver, borax, developed with pyro potash. A flat and weak print.



No. 3.]

"ON THE ZERMATTBACH." [R. E. Shawcross.

[CERTIFICATE.]



HARRIS, G. E. (London).—"Beaching." Watson's R.R.,  $f/8$ ; instantaneous, about 1-15th sec., April, good diffused light, 11 a.m.; Ilford ordinary; new improved Platinotype (cold process). A very good print, and speaking well for the process.

HARRISON, W. B. (Longton).—"A Small Boat in the Mersey." Griffiths' Guinea hand-camera; instantaneous, April, diffused light, about 4 p.m.; Paget Prize. "As it did not come out very well with the hydroquinone developer, I rinsed the negative and finished it with pyro-ammonia. My first competition." This is a quarter-plate print of water and clouds and a small, very small boat in the centre, which can be easily covered by a sixpence.

HARTNESS, J. B. (London).—"S.S. *Honfleur* making Jersey." Houghton's R.R.,  $5\frac{1}{2}$ ,  $f/11$ ; 1-80th sec., Thornton-Pickard inst. shutter, April, changeable light, but very good at times, 10.30 a.m.; Paget's xxxxx., pyro-ammonia developer. Printed too deep, but a fine bit of water and cloud.

HAWTHORN, W. T. (Wigtownshire).—"Two Fishers." Optimus R.R.,  $f/22$ ; 5 sec., October, 1891, sun, 4 p.m.; Castle; home-prepared paper; platinum (Clark's process).

HEATH, F. (Kendal).—"Near Ulverston." Underwood's Instanto.,  $f/16$ ; 2 sec., April, diffused light, 11.30 a.m.; Edwards's. Should have been taken the other way of plate, and far too much foreground.

HILL, F. (Herts).—"R. M. Steamer *Frederica*." Watson's R.R.,  $f/8$ ; 1-8th sec., April, cloudless sky, brilliant sun, 10 a.m.; Edwards's inst. Over-printed and too much foreground.



No. 4.]

"EYNSFORD, RIVER DARENT."

[A. Borsley.

HODD, J. E. (Acton).—"On the River Colne." R.R.,  $f/16$ ; 1-20th sec., May, good diffused light, 12.30; Edwards's Iso. film. The lines run to centre, and over-printed.

HOWELL, E. (Yeovil).—"A Bend in the Yeo." Dallmeyer's R.R.,  $f/12$ , iris diaph.; cap off and on, April, good light, 3 p.m.; Ilford rapid. "Cows compelled the use of large stop. Developed with hydroquinone." This view represents midnight, from fearful over-printing.

HUME, P. (Newcastle-on-Tyne).—"The River Derwent near Swallow." Underwood's Instanto.,  $f/32$ ;  $2\frac{1}{2}$  sec., August, sunshine, 3.40; Thomas ordinary, extra rapid. "The negative was developed with pyro ammonia." Too panoramic, wants clouds, over-toned.

ISON, W. (Bedford).—"Hastings Beach from Rock-a-Nore." Marion's R.R.,  $f/11$ ; about half sec., September, sunshine, 11 a.m.; Marion's ordinary. Looks like a night scene, printed too deep,  $1\frac{1}{2}$  inches too much foreground, 2 inches too much on left-hand side.

IVE, E. V. (Henley-on-Thames).—"Medmenham Abbey." R.R.,  $f/16$ ; off and on, sunshine, 1 p.m.; Castle. This can only be well taken from the opposite bank by a long-focus lens. This print has too much in it, and is over-printed.

JAMES, JUN., J. (London).—"The Lea." Wray,  $f/8$ ; 1-30 sec.; Thornton-Pickard shutter with speed indicator, April, bright sunlight, cloudless sky, 12 midday; Edwards's inst. A very fine instantaneous study, but an inch less foreground and  $1\frac{1}{2}$  inches off right would have improved it.

JELLEY, C. H. (Grantham).—"On the River Witham." Lancaster's Instanto.,  $f/30$ ; 3 sec., April, bright light, 7 a.m.; Ilford half-

plate rapid. "Only commenced photography in March." Too many straight lines in the trees, and the print is fearfully over-developed.

JENKINS, G. W. (Surrey).—"The River Wandle." Burr 7 by 5 rapid doublet,  $f/32$ ; 3 sec., Good Friday, bright sunlight, 11.45; Thomas' extra rapid. "This is a print from a rather over-exposed plate, intensified with mercury and ammonia. Plate developed with pyro ammonia." Wants figures in the foreground.

JONES, W. L. (Cheshire).—"Whitby Harbour, from the Station." Dallmeyer R. R.,  $f/16$ ; cap off and on, August, good light, sun behind a cloud, between 10 and 12 a.m.; Paget xxxxx. Rather a pleasing picture, but printed too deep.

JONES, J. (Lewisham).—"Richmond, Low Water." French R. R.,  $f/6$ ; drop-shutter, May, sunlight, 5.15 p.m.; Thomas' thickly-coated extra rapid. Over-printed, and ends of bridge cut off.

JONES, G. J. (Malton).—"Faleide, Norway." Ross' R. S.,  $f/32$ ; 3 sec., August, dull light, 10 a.m.; Ilford ordinary. Wants clouds, and the whole composition runs to left-hand corner.

KAUFFMANN, J. (Zurich).—"The River Limmat, at Baden." French R. R.,  $f/16$ ; 6 sec., April, rather dull light, 6.15; Dr. Smith's Swiss plate; bromide. Far too full of straight lines, and the most depressingly formal white factories.

KEMP, H. (R.R.,  $f/16$ ;  $2\frac{1}{2}$  sec.; Paget plate, developed by Paget formula; 4 p.m., facing N.W. Printed too deep, and too many straight lines in it.

KENNEDYCE, P. (Limerick).—"Castle Lough Bay, Lough Derg on Shannon." Robinson's R. R.,  $f/16$ ; 4 sec., September, evening, near sunset, but no sun; Ilford ordinary. Over-printed, and far too much foreground.

KINSEY, J. V. (Bridlington Quay).—"Bridlington, Harbour Mouth." R. R.,  $f/16$ ; drop-shutter, Easter Monday, sunny, 3 p.m.; Ilford ordinary. Wants an inch and a half off foreground, and clouds putting in.

LANG, F. C. (Liskeard).—"The Walk by the River." Dallmeyer's R. R., 10 in. focus,  $f/40$ ; 2 min., April, good light, noon; Ilford ordinary; carbon, single transfer. A very good print, and in the first nine.

LAVANEY, T. H. (Brighton).—"Medway, near Hallerton." Lancaster's Instanto.,  $f/32$ ; 1 sec., September, sunshine, 4 p.m.; Ilford ordinary, developed with pyro soda. Too much foreground, figure not wanted, and printed too deep.

LEWIS, M. (Walton-on-Thames).—"Bridge near Sunbury-on-Thames." French doublet,  $f/29$ ; 2 sec., May, cloudy, 12 a.m.; Marion's, hydroquinone developer. "The day was rather cloudy, and occasional showers." By no means artistic with the hideous bridge.

LINTOTT, B. (Horsham).—"On the Top of the Tide." Taylor,  $f/11$ ; 1-32nd sec., April, sun, although not bright, 3.18 p.m.; Lumiere. A very effective study, and very highly commended, but execrably mounted.

LLOYD, I. (South Wales).—"Clyngwyn Waterfall" (Winter). Lancaster's Instanto.,  $f/10$ ; 2 sec., March, dull light, 3.30; Ilford ordinary; Ilford. Fearfully over-printed and over-toned.

LORD, R. S. (Manchester).—"On the Wey." Laverne,  $f/10$ ; 2 sec., August, sunshine, afternoon; Ilford; platinotype. Print very flat and over-printed.

MACADAM, J. A. (India).—"An Assam River in the Cold Season." R.R.,  $f/32$ ;  $1\frac{1}{2}$  sec., February, bright light, 11 a.m.; Wratten and Wainwright's ordinary; Platinotype Co.'s paper cold bath. A very good print of a well chosen bit, highly commended.

MACAFEE, A. P. (London).—"On the Thames, near Sunbury." Euryscope,  $f/22$ ; 1 sec., May, diffused light, 3.50 p.m.; Ilford White Label, hot-bath platinotype. "Terribly windy, and showers occasionally." Sadly wants clouds, which would have made the picture.

MACLEOD, R. (Hayward's Heath).—"Dunvegan Castle." Beck's Autograph 7 in. focus,  $f/44$ ; 60 sec., December, good light, "but the high latitude in which sky lies affects the light in winter a good deal"; Wratten's ordinary. Utterly spoilt by over-printing.

MACMILLAN, M. (Rothsay).—"Duck Pond." Vever's R.R.; quarter-plate, 11; instantaneous, May, good light, 1.30 p.m.; Thomas' extra rapid. A poor, over-printed thing.

MCCLEERY, J. (Belfast).—"Before the Start." Taylor's R.R.,  $f/16$ ; diffused light, shutter (Kershaw's); Marion slow, pyro and ammonia. Another case of a good thing spoilt by over-printing.

MAHLENDORFF, W. (Hendon).—"Brent River." Lancaster's Instanto., about  $f/11$ ; 3 sec., August, bright sunlight, 12.15; Thomas' T.C.L. Fearfully over-printed.

MAITLAND, VISCOUNT (Lander).—"A Peep at the River through the Trees." Wide-angle,  $f/32$ ; 5 sec., April, sunshine, 1.30 p.m.;



Fry's Kingston special, 30 times; platinotype, Platinotype Co's developing salts. "The printing paper I have used is the new platinotype paper, developed in bath of 60 deg. temperature." A very fine print, both technically and artistically. This competitor has made rapid strides lately.

MALPAS, R. (Reading).—"Sonning Bridge." 1½ sec., July; Lancaster's Instanto., small; Thomas' extra rapid. "Taken about 3.30 in the afternoon, cloudy, exposed during a bright interval—a little under, I think—clouds printed in sky, and through tissue paper in water to break up an otherwise white patch." Over-printed, and an uninteresting foreground.

MANNERS, S. (London).—"Richmond Bridge." Wray's R.R., f/16; 2 sec., May, dull light, 6 p.m.; Ilford ordinary; wind rather high. A far more artistic picture could have been made by shifting the camera three feet to the left. Slightly under-exposed.

MARRIOTT, MRS. M. E. (Liverpool).—"Sunset." Optimus R.R., f/44; shutter, May, cloudy, 6.30 p.m.; Ilford ordinary. A very good study of sunset effect.

MARRIOTT, E. L. (Liverpool).—"On the Swale." Optimus R.R., f/16; 2 sec., August, cloudy, 6.30 p.m.; Ilford ordinary. A little too much foreground and over-printed.

MARRIS, H. F. (Workop).—"Thorpe, near Norwich." Underwood's Albion, quarter-plate, f/16; nearly instantaneous, August, sunny, midday; Marion's instantaneous. Over-printed, and too much foreground.

MASON, J. W. B. (London).—"Off to the Fishing Ground." Dallmeyer's R.R., f/13; Thornton-Pickard shutter, about ¼ sec., July, bright sun, just covered by passing cloud, 10.15 a.m.; Thomas' extra rapid, thickly coated. Too much foreground, and wanting in brilliancy.

MASSÉ, H. J. (Ealing).—"Perivale Church, on Banks of River Brent." Lancaster's Instanto., half-plate, f/10; 1 sec., April, good light, bright sun, 12.30 p.m.; Ilford new label. Over-printed and over-toned.

MAY, H. (Surbiton).—"Thames Sailing Club." Optimus, full aperture; instantaneous, bright sunshine, no clouds, 2.30 p.m.; Black Band rapid. "Strong breeze." Too much foreground, and fearfully over-printed.

M'CLINTOCK, R. L. (Woolwich).—"The Mouth of the Lake of Shadows." Lancaster's half-plate, R.R., f/11; ¾ sec. (Newman's shutter), August, diffused light, no sun, rather cloudy, about 4 p.m.; Ilford ordinary, hot-bath platinotype. A very good print, but some life would have improved it.

MEADWAY, F. W. (London).—"Broadstairs." No details sent. The foreground wants shading whilst printing.

MEDLOCK, C. H. (London).—"The End of a Stormy Day." R.R., f/16; 6 sec., Whit Monday, good light; it had been raining all day, but cleared up a little as the sun was setting, 6.30 p.m.; Ilford White Label. "This was taken with a Facile hand-camera." The white fence is bad, and the left corner weak.

MITCHELL, S. J. (Blackburn).—"View near Rufford Church." Mitchell's R.R., Iris diaphragm, f/32; 45 sec., May, very dull light, about 5 p.m.; Thomas' thickly coated landscape. "Strong gusts of wind at the time; had to make the exposure in three parts, owing to this." A very pleasing picture, and shows good, careful work.

MOFFATT, W. TODD (Aberdeen).—"Stettin River." Fallowfield's Facile, f/16; snap, September, sunlight, 11 a.m.; Fitch's Xylonite film. A little of the straight line foreground might well have been spared.

MOON, G. (Lancashire).—"White Water." Marion's R.R., f/32; 2 sec., September, good light, sun just obscured, 11.30 a.m.; Ilford ordinary. The whole of the picture looks jammed into one plane.

MOSES, F. (Plymouth).—"Group of Boats, Sutton Pool." Lancaster's special Instantograph, f/16; 1 sec., May, bright light, 9 a.m.; Ilford extra rapid. "Young beginner. First attempt at seascapes." Over-exposed, too much foreground, print flat and poor.

MOSS, C. (Sydenham).—"Where the Trout Lie." R.R. (Watson's), f/16; 2 sec., April, dull, 11 a.m.; Ilford ordinary. Over-toned, and the composition leans too much to the left.

MALAN, H. NOEL (Epsom).—"Repose." Ross' Rapid Symmetrical, f/11; shutter, May, very good light, 11 a.m.; Ilford ordinary. "This view was taken towards the light; the clouds are on the negative, and no double printing has been resorted to." A very fine print, but would have been improved if the swan had not been right in the centre.

NETTLESHIP, T. W. (Bawtry).—"A View on the Don." Optimus

half-plate R.R., f/32; 4 sec., May, moderately good light, 5.50 p.m.; Ilford Iso. Over-toned, and wants clouds.

NORMAN, A. (Essex).—"Sticklebacks." R.R., f/22; 2 sec., May, fairly bright sunlight, 6.30 p.m.; Ilford ordinary. A very good picture, which would probably have scored only spoilt in printing.

NORTHWOOD, W. (Wordsley).—"On the Severn, Bewdley." Lancaster's, f/16; 1 sec., June, sunlight, about 3 p.m.; Ilford ordinary. A very flat, poor print.

NORTON, J. (Sheffield).—"Blackbrook." Optimus R.R., f/32; 3 sec., June, diffused light, 11.45 a.m.; Ilford ordinary. Should have been taken the other way of plate; a fearful colour.

OWEN, J. (London).—"Leigh." Optimus Euryscope, f/22; 6 sec., May, dull, 6.30 p.m.; Thomas' extra rapid. "Taken against the light; very dull at intervals, with occasional showers." A very good result though rather over-printed.

PAGE, A. E. (Darlington).—"Balder Mill, Cotherstone." Lancaster's Rectigraph, f/40; 3½ sec., May, bright sunlight, 12 noon; Ilford ordinary. "This view was taken on a windy day, and I had to wait about a quarter of an hour with the slide drawn down before it could get the trees anything like." The whole print is tinged with a yellow stain.

PARTIDGE, F. (Launceston).—"Where the Speckled Trout do Mock the Angler's Skill." Lancaster's Rectigraph, f/20; 1 sec., February, sunlight, 12.15; Castle. Far too deeply printed; it is almost a night scene.



No. 5.]

ON THE ALN."

[J. W. Sutherland,

PERKINS, MRS. E. (Dorset).—"Teignmouth Harbour." Wray's W. A. R., 7 in. focus, f/16; 1 sec. April, bright sun, with clouds. 4 p.m.; Ilford ordinary; Ilford P. O. P., sulpho-cyanide of ammonia; printed from one negative, untouched. Very badly over-printed.

PETTY, D. (London).—"North Esk, above Salmon Loughs." Crouch's R.R., f/32; 8 sec., August, clear day, without sunshine, afternoon; Ilford ordinary. Over-printed, and wants clouds to counteract the leaning composition.

POLLOCK, J. (Belfast).—"Eventide." Beck's R.R., f/16; 2 sec., April, weak sunshine, 4 p.m.; Thomas's T. C. R. Rather too flat, but a very fine effect.

POPE, M. (Warwick).—"Medway, Aylesford." Leviathan R.R., f/22; 2½ sec., August, brilliant light, noon; Thomas's rapid. Far too wide an angle included; this can be made a picture of, but it wants at least a 16 in. focus lens for half-plate. We had a good try round here at Easter.

POPHAM, H. (South Shields).—"A Golden Gleam." Underwood's, f/32; inst., March, early morning, sunrise, 6 a.m.; Edwards's Iso. inst. "The sun had not appeared that morning until 6 a.m., when I was fortunate to grasp the opportunity, with the result here shown." This is a midnight scene; we have, unfortunately, had too much experience in photography to be taken in by it.

POTTERS, J. (Worthing).—"Patience." Ross' R.R., 8 by 5, f/20; 2 sec., June, misty, 10 a.m.; Fry's K.S., bromide. Far too many straight lines, and the reeds in the foreground should have been sharp.

POUNDER, F. K. (Enniscorthy).—"On the Boro', Wexford." R.R.,



*f/22*; 3 sec., sunshine; Ilford White Label, hydroquinone. An inch and a half off foreground would have considerably improved this.

POWELL, F. C. (Burslem).—"River at Beddgelert." Newton's Orthopanactic *f/16*, 4 sec., summer holidays, August, diffused light, 12 noon; Ilford ordinary. Another awful case of over-toning.

PRESS, H. (Bath).—"The Bath Weirs." W. A. R., *f/16*;  $\frac{1}{2}$  sec., May, weak sunlight, one o'clock; Ilford rapid. Too wide an angle included, too much sky, too much water, and too dark on left-hand side.

PRITCHARD, H. (Lancashire).—"A Peep on Lake Newton-le-Wil-lows, Lancashire." Combination Rectigraph, *f/20*; 1 sec., February, very hazy, 11 a.m.; Ilford ordinary. "My first entry for competition; water very muddy, sky dull." Over-printed and over-toned.

RAITT, W. (Uddingston).—"The Miller's Falls, Glen Aray." Dallmeyer R.R., *f/16*; 1 sec., September, bright sunshine, 1 p.m., Eastman film, half-plate; platinotype, hot bath. The whole of the left side of this print is too dark, and a good picture is thus spoilt.

RATCLIFFE, E. M., JUN. (Aughton).—"Stepping Stones." Eury-scope, *f/32*; 3 sec., May, sun shining, 6 p.m.; Ilford ordinary. We do not think this is original, as it is almost identical with the first-prize picture in Monthly Competition, No. 384, p. 115. Printed too deep.

RAYMOND, G. (Corfu).—"Fishing Village." This would make a very fine picture if suitable clouds were printed in to counteract the leading lines of the composition.

RENDELL, H. (Devon).—"Hope Cove." Wray R.R.,  $5\frac{1}{2}$  in., *f/22*;  $\frac{1}{2}$  sec., August, sunshine, noon; Thomas' extra rapid. Flat and over-toned.

RENNINGTON, R. (Kendal).—"On the River Kens." Dallmeyer's R.R., smallest; 2 sec., May, good light, noon; Ilford ordinary; platinotype. "The negative is untouched, and the first time I have competed." The figure and tree on right quite unnecessary.

ROBERTS, C. A. (Liverpool).—"Bridge in Glen Mave." Dallmeyer's 6 by 5 R.R., *f/357*; 1 sec., July, bright sunshine, 2.30 p.m.; Ilford ordinary. A very good print technically, but weak artistically.

ROBERTSHAW, J. (York-shire).—"River Hebden." French R.R., *f/22*; 6 sec., April, sunlight, 4.30; Ilford ordinary. Over-printed, and a hideous pink tinge.

ROCHE, A. (Cork).—"Bridge at Glanmire, Cork." French, *f/32*; 4 sec., April, sunlight; Paget Phoenix. Too much foreground, and over-printed.

SADLER, H. R. (Lancaster).—"Part of Whitby Harbour." R.R., Optimus, *f/32*; 4 sec., August, fair and changeable, sunny attime of exposure, 3.50 p.m.; Wratten and Wainwright's ordinary. Far too deeply printed.

SALMON, P. R. (Cambridge).—"Lowestoft, Inner Harbour." Lancaster's Instanto.; about 1-10th sec., September, bright, 11 o'clock; Ilford ordinary; Ilford P.O.P.; sulpho-cyanide of ammonium. Printed far too deep, but a very pleasing picture could be made of it.

SAWYER, J. (York).—"Where Billows Break." R.R., *f/11*; shutter, about 1-20th sec., April, sunlight, 12.30 p.m. The sea is far too white, and it wants clouds.

SCHIERWATER, F. (Liverpool).—"Menai Bridge." Taylor's  $7\frac{1}{2}$  in., *f/32*, 5 or 6 sec., April, dull, about 6 p.m.; Ilford rapid Isochromatic. A very unusual point of view, but a very effective print.

SCOTT, E. (Ireland).—"A River near Healy's Bridge." R.R., *f/16*; 2 sec., April, diffused light, 11 a.m.; Ilford ordinary, quarter-plate. "The negative was a little thin after development, so I intensified it slightly." Considerably over-toned and muddy-looking.

SEALY, H. H. (Upton Lovel).—"The Ford at Catford." R.R.,  $\frac{1}{2}$  in.;  $\frac{1}{2}$  sec., February, sunshine, 11 a.m.; Ilford ordinary. A very flat, poor print.

SELBY, H. (London).—"The Royal River." Ross' Wilsonian single, *f/11*; 2 sec., October, sunshine, hazy day, 4 p.m.; Star, Ilford; bromide, slow rough; developed with iron. "Negative over-exposed, but good for bromide work. The plate, one of the now defunct Star bromo-iodide." A very good study of Windsor, well to the front.

SELBY, LESLIE (London).—"By the Riverside." Wray, single

landscape, *f/16*; 1 sec., August, very bright light, 4.30 p.m.; Thomas's thickly-coated extra rapid. A very soft, pleasing picture, but could have been improved by clouds.

SEVERN, L. (London).—"The Sea at Plimont, Jersey." Ross's Rapid Sym., *f/16*;  $\frac{1}{6}$  sec., April, bright sunshine, 3.15 p.m.; Edwards Iso. inst. Most fearfully over-printed, as regards the cliffs, and too much foreground.

SEVRS, J. (Kendal).—"Levens Bridge." Ross's single, *f/15*; 6 sec., August; bright diffused light, 6.30 p.m.; Marion's ordinary. A very pleasing print, and highly commended.

SHAWCROSS, R. E. (N. Wales).—"On the Munttbach, Zermatt." R. R. by Bush; end of August, 1891; sunlight, 7 a.m.; Ilford ordinary; Ilford P.O.P., sulpho-cyanide and gold.

SHEFFIELD, F. (Upper Norwood).—"The River Iton, Normandy." Landscape, *f/9*; about 1-20th sec., April; fairly good, 3 p.m.; Paget xxxxx; Eastman's bromide paper, developed with hydroquinone. Print over-exposed and over-developed.

SHIMWELL, H. (Birmingham).—"The Storm is O'er." Lancaster's single, *f/22*; inst., June; bright sunshine for sea, sun behind clouds for sky; noon; Castle plate; Platinotype, new cold-bath process. This is another fictitious moonlight scene.

SIMPSON, J. (Kinstown).—"Valkyrie running out of Kingstown Harbour." Laverne, *f/11*, snap-shot, May; dark squally day, 10 morning; Thomas's E. R. Too deeply printed, but an effective snap-shot.

SKINNER, W. (Sheffield).—"A Tributary of the Don." R. R., open aperture; 5 sec., October, fairly good, 3 p.m.; Barnet ordinary. Eastman's bromide, developer ferrous oxalate. Fearfully over-exposed, and the greater part has doubled out-lines.

SLATER, J. V. (Sheffield).—"A Quiet Sail." Lancaster's landscape, *f/32*; 5 sec., April, very fair, 4 p.m.; Ilford ordinary; bromide, contact print. A very poor print, over-exposed, and no sail visible.

SMALLPIECE, M. (Winder-mere).—"A Westmoreland Beck." Single, *f/16*; 1 sec., May, sunshine, 10 a.m.; Marion's ordinary. Over-printed and over-toned; no sign of sunshine at all.

SMITH, C. P. (Bristol).—"Swallow Falls, North Wales." Wray, 2 sec., August, good light, 3 o'clock; Fry's thirty times. Aristotype paper. A good print, utterly spoilt by the hideous pink tone.

SMITH, H. S. (Bradford).—"A Rest by the Way." Beck's R.R., *f/22*;  $\frac{1}{2}$  sec., April, sunshine, noon; Paget's xxxxx. A very good print, but the tree divides the picture too much.

SMITH, JUN., J. (Liverpool).—"On the Conway." French, *f/16*; 4 sec., dull light morning. "My first attempt in arranging the figures, and to include a nice view." By no means badly arranged, but sadly over-printed.

SOLTON-SYMONS, G. (Plympton).—"On the Tarrant, Dorsetshire." R.S.; cloud and sunshine, 2 sec., March; Wratten's, *f/32*. A very fine study, and deservedly takes the Silver Medal.

SPENCER, H. R. (London).—"By the Banks of the Stream." Key hand camera, *f/8*;  $\frac{1}{2}$  sec., April, very bright light, 3 o'clock; Edwards' Iso.; Ilford bromide; uranium, and ferricyanide and potass; print developed with hydroquinone. A very clear and effective study made from nothing, and shows very good technical work.

SPENCER, J. H. (Chester).—"The Dee, near Chester." Optimus 5 by 4 R.R.,  $5\frac{1}{2}$  in. focus, *f/16*;  $\frac{1}{2}$  sec., Newman shutter, May, sunshine, 2.20 p.m.; Paget Prize plate xxxxx. A very clear little print, and well to the front.

SPENCER, H. G. H. (Jersey).—"La Collette, Jersey." Ross R.S., *f/16*;  $\frac{1}{2}$  sec., October, dull (very thick clouds), 3 p.m.; Ilford rapid (White Label). A very clever wave study, though it could have been much improved by shading the negative in parts during printing.

STERICKER, W. P. (London).—"River Kile, Yorks." Optimus quarter R.R., *f/11*;  $\frac{1}{2}$  sec., June, sunshine, bright light, noon; Thomas' T.C.E.R.; platinotype. "Taken in hand-camera; snap shot." A very nice clean little print, but wants the tree branches on the left cut out and clouds.

STEPHENS, H. (London).—"Early Spring." Dallmeyer's R.R., *f/32*; 35 sec., April, good light, 11.45 a.m.; Wratten's Instanto; platinotype.



No. 6.]

"ROTHESAY HARBOUR."

[J. C. Walling.



"Taken between the snow showers." We should have liked this better without the tree in the foreground; shows very careful work.

STEPHENS, O. (Reading).—"Lowestoft Fishing Boat." Rapid Euryscope, *f/16*; Kershaw shutter, October, bright sun, between 11 and 1; Mawson. Sadly wants clouds, but as an instantaneous shot very good, some seagulls actually being very sharply defined.

STERRY, J. (Red Hill).—"The Lake, near Salford Mill, Surrey." Triplet, *f/22*; cap off and on, May, bright light, 5 p.m.; Marion ordinary. Over-printed and over-toned, and wants clouds.

STITT, J. CARLTON (Liverpool).—"In Water Land." Wray R.R., 6 in. focus, *f/16*; 1 sec., September, dull light, 10.30; Castle plate (pyro and carbonate developer). An inch too much foreground, and the bits of tree on left distracting.

STRICKLAND, F. (Kingsmere).—"On the Esk, near Whitley." Optimus Euryscope, *f/10*; April, 2 p.m.; Eastman film; bromide, developed Rodinal. "This was taken on a 5 by 4 in., with a lens  $6\frac{1}{2}$  in. focus, then enlarged about two diameters, and cut down to its present size." Enlargements are not admissible.

STUART, H. (London).—"River Brent, near Sudbury." R.R., *f/22*; 5 sec., May, dull light, 11.15 a.m.; Ilford ordinary. Another good thing spoilt by over-printing.

SUTHERLAND, J. W. (Newcastle-on-Tyne).—"On the Alyn." Optimus 7 by 5, *f/12*; 1 sec., April, bright, with clouds, 3 p.m.; Thomas' extra rapid; Ilford P.O.P., combined bath.

THOMPSON, J. (Burton-on-Trent).—"On the Alyn." Landscape, *f/30*; 2 sec., May, bright light; 3 p.m.; Ilford ordinary, Celerotype, borax. This would have been improved by being taken the other way of plate, and by less sharp focussing for the distance.

THOMPSON, A. T. (Yorkshire).—"The Old Mill." Laverne R.R., *f/25*; 2 sec., April, dull and overcast, sun nearly obscured, 11.30 a.m.; Paget xxx. More over-printing.

TIMINHD, C. A. (Rochfield).—"Falls on the Lladgwy River." Wray's wide angle, *f/24*; 3 sec., July, bright light in front of camera, 3.30 p.m.; Ilford rapid. Another case of a good thing spoilt by over-printing.

TODD, A. (Kirkcaldy).—"Dunikier Lake." Lancaster single, *f/10*; cap off and on; April, sunshine, 3.30 p.m.; Ilford rapid. Fearfully over-printed and over-toned, one of the worst prints in the competition.

TOONE, J. (Leicester).—"River Trent, near Wychnor Hall." R.R., *f/32*; cap off and on; April, sunlight, but strong clouds about, 12.30 p.m.; Barnett. Utterly spoilt by over-printing.

TYLER, C. (London).—"A Pleasure Party Preparing for the Nore." R.R., *f/11*; 1-7th sec., August, good, 11 a.m.; Edward's Isc.; Ilford P.O.P., borax. A very hard print, a by no means pleasing tone.

VESEY, A. H. (London).—"Royal Mail s.s. Ireland." Watson's R.R., full; inst. (Sands and Hunter's shutter), light fairly good, cloudy, 4.45 p.m.; Paget Prize (extra rapid), combined bath. "I had difficulty in focussing, as the course through the harbour is varied." Over-printed, and wants at least an inch off top, bottom, and sides.

WADLING, J. C., Lieut.-Colonel (Argyleshire).—"Inner Harour, Rothesay." Taylor, *f/16*; inst., February, sun and mist, 2.25 p.m.; German. This print has a slight haze over the lower part of the picture, or it would have come out higher still. Except for this, it is a very fine, soft study.

WALL, MRS. L. M. (Ashburton).—"Dart." R.R., *f/32*; cap off and on, May, sun, noon; Ilford ordinary. Another bad case of over-printing, and the sky wants trimming down.

WALLACE, W. (Edinburgh).—"The Morning Mail." R.R. Optimus, open, *f/8*; drop shutter, May, dull light, 7 a.m.; Thomas's T.C.; platinotype (hot). This print wants trimming down, and shows marks of unequal development.

WALMSLEY, T. (Oldham).—"In Boisterous Mood." Ross's R.S., *f/8*; drop shutter, September, overcast, 11 a.m.; Wratten inst. "Wind very high, camera dismounted from tripod, and held on edge of low sea-wall." Another case of over-printing.

WANNINGTON, W. E. (Malta).—"A Calm Afternoon." R.R. Lancaster's, *f/20*; 1 sec., April, bright light, 3.30 p.m.; Ilford ordinary; bromide paper. "Negative rather over-exposed." Could have been improved by cutting half an inch off foreground, and the boats should have been in the right-hand corner to break it up.

WARD, E. (Liverpool).—"A Bend in the River, Wye Dale." Eureka R.R., *f/32*; 5 sec., April, bright light, 3.10 p.m.; Ilford ordinary; I.P.O., borax. "The light in the distance very strong, consequently over-exposed in the centre of picture. I was only three hours, so could not take it any other time." This could have been improved by dodging in printing or the use of bromide.

WARRACK, J. (Edinburgh).—"The Lady's Pool." Dallmeyer R.R., *f/11*;  $1\frac{1}{2}$  sec., April, rather bright light, about noon; Ilford ordinary, bromide, developed with hydroquinone. "My first open-air exposure this season." Print considerably over-developed.

WATERS, J. (Keighley).—"Scarborough Harbour." Lancaster's Instantograph, *f/27*; sun and clouds, 1 sec., Ilford ordinary, pyro and ammonia. "Untouched negative and print." Print decidedly flat, and the numerous straight lines of the masts are too prominent.

WEBB, M. (Worcester).—"On the Severn at Worcester." Lancaster's Instanto, *f/30*; 6 sec., May, fairly bright light, 4 o'clock; Ilford ordinary. "My first season at photography, and first competition." At least two inches could be cut off the foreground, and it wants a boat or life on the right-hand side.

WHITMORE, F. (Cheshire).—"View in Loerdal, Norway." R.S., *f/32*; 5 sec., June, fairly bright light, 3 p.m.; Thomas' rapid; platinotype, hot-bath. A very poor flat print, we should say on stale paper.

WILLANS, G. C. H. (Huddersfield).—"View from Little Thornage Ford." Watson's  $8\frac{1}{2}$  by  $6\frac{1}{2}$  R.R., *f/16*; half sec., April, sunshine, 10.30; Edwards' special rapid film. "Edwards' new paper toned with the Ilford bath took about three-quarters of an hour to reach the tone." The lines run rather too much to the centre of the picture, but a very good print.

WILSON, Mrs. A. M. (Kendal).—"Low Tide on Shores of Iona, N.B." Rouch's detective, *f/10*; snap-shot, second week of June, sunlight, 4.30 p.m.; Thomas' T.C.E.R. This wants clouds badly.

WIN, W. (Bath).—"Cottage at Bixley on the River Exe." Wray's R.R., *f/32*;  $1\frac{1}{2}$  sec., May, fairly bright sun, with white clouds, 12.35; Edwards' special landscape. A very good print technically.

WOODS, G. (Hastings).—"A Modern Siren." Dallmeyer's R.R., 11 in., *f/22*; 2 sec., December, 3.15; Thomas' T.C.E.R., own sens. drawing paper. This is spoilt by the Siren, otherwise it is a very fine cloud study.

WRATISLAW, W. (Rugby).—"Highland Railway running through the Pass of Killiecrankie." Dallmeyer's landscape lens; whole plate; 15 sec., September, very poor, 4 p.m.; Ilford. Another awful case of over-printing.

WRIGHT, W. (Belfast).—"Groomsport Harbour." Ross's R.S., *f/32*; 1 sec., August, sunshine, about 8 a.m.; Ilford ordinary, Ilford P.O.P.; sulpho-cyanide of amm. "Taken with a  $7\frac{1}{2}$  by 5 camera on quarter plate, developed with pyro-ammonia." Wants clouds, but an effective study.

## With a Camera in Spain.

By AUSTIN J. KING.

(Continued from p. 419.)

THE palace was built from towards the end of the thirteenth to the first decade in the fourteenth century. So much has been destroyed to make room for the palace which Charles V. commenced to build (but it has never been roofed in) that we cannot exactly trace the scheme of the architect as regards internal arrangement.

A plain antechamber opens into the Court of the Fishpond or the Court of Myrtles, for it is known by both names. This is the exterior court, where servants and guests of the meaner sort waited until it was convenient to receive them in the great Hall of Ambassadors.

The floor is of white marble, and hedges of sweet myrtle run at either side of the central tank. At either end were high jets of water. The court itself is open to the sky, but a covered cloister or colonnade runs round. This is the part of the palace damaged by fire a few years ago. I was fortunate in obtaining a photograph on my first visit.

We pass from this court into that termed the Court of Lions from the very conventional group of animals supporting the beautiful alabaster fountain in the middle. This court formed the centre of the palace. The centre portion is open to the sky, and was laid out with beautiful parterres of flowers of varied hue. A high jet of water rose from the top of the fountain, and the descending water fell in showers into the basins beneath. The lions also each spouted water into the lower basin. There is a pavilion at each end of the court, with a domed roof and many clustering columns. One formed the entrance from the Court of Myrtles; the other to the Hall of Justice, which led to the Hall of Ambassadors.

A colonnade, covered by the projecting upper storey, made a shady path all round. From the left-hand side of the Court of Lions, as one enters from the Court of Myrtles, is a hall, quaintly termed the Hall of the Sisters, for no better reason than that part of the floor is composed of two similar blocks of marble. It would indeed be difficult to exaggerate the loveliness of this hall. In the wall at the entrance are niches for the slippers of those who enter, and just beyond, small chambers for slaves to wait in until summoned by the handclap of their masters. From the larger hall opens again an inner chamber, with a window looking



into a charming little garden. A gallery above afforded accommodation for musicians or singers. The roof is ornamented with stalactites in stucco; each detail is carved in wood and overlaid with a thin coating of plaster to receive the colouring.

On the other side of the court is the Hall of the Abencerages. It is smaller and darker, but the roof is still more elaborate and beautiful. The splashing fountain and the absence of all external openings must have made it a delicious retreat in hot weather.

The Abencerages and the Zegris were the two most powerful of the many tribes which made up the population of Granada. There was a long-standing feud between them, and the legend runs that Boabdil el Chico invited thirty-five of the leading Abencerages to an interview in this hall. A heavy curtain hung over the doorway, one only was admitted at a time, and as the curtain fell behind him a blow from a keen Toledo blade severed his head from his body so deftly and so quickly that the rushing blood drowned the attempted cry. Thus, it is said, the marble basin of the fountain was choked with thirty-five still palpitating corpses, and the blood flowed down the marble duct into the Court of Lions.

Passing out of the Court of Lions, we reach the Hall of Justice, justly celebrated for the extreme beauty of the arches supporting the roof. In this hall, as Washington Irving describes, was celebrated the first mass in thanksgiving for the capture of Granada. "I picture to myself," says he, "that mixture of mitred prelate, and shaven monk, and steel-clad knight, and silken courtier, when crosses and croziers and religious standards were mingled with proud armorial ensigns and the banners of the haughty chiefs of Spain, and flaunted in triumph through these Moslem halls. I picture to myself Columbus, the future discoverer of a world, taking his modest stand in a remote corner, the troubled and neglected spectator of the pageant. I see in imagination the Catholic sovereigns prostrating themselves before the altar and pouring forth thanks for their victory while the vaults resounded with sacred minstrelsy and the deep-toned Te Deum."

We wander for awhile amidst the baths (both water and hot air), reclining rooms, and gardens, and so into the open air and on to the separate towers which still retain their architectural beauty.

The first is the Torre del Mihrab, a little mosque used as a private oratory. The incised work is really very fine, but the colouring has been roughly restored, which spoils the effect.

The second is still more beautiful—the Torre del Cattiva. The view on the screen is of one of the window embrasures. There are several legends which are made to account for the name. That told by Washington Irving, is at all events the most poetical. Mahommed the Left-handed in those days reigned in Granada. In a foray in the direction of Elvira he captured a noble maiden and her duenna Kadiga. The maiden married Mahommed, and bore him three daughters of surpassing beauty, and shortly died. Kadiga, the duenna of their mother, became their nurse, and, being of an accommodating disposition, embraced Islamism, and taught its doctrines to her charges.

Mahommed, anxious to guard his daughters against all dangers, kept them in the charming little pavilion you see represented on the screen. When they grew to maturity they pined for excitement and amusement, and both were afforded by three Christian Hidalgos, who, having been taken prisoners, were employed to labour in the bed of the torrent Darro, which boils along the ravine at the foot of the tower. During the siesta allowed even to slaves, they sang Spanish roundelays to the accompaniment of a guitar. The damsels were enchanted. Kadiga was kind, and the Renegado in charge of the convict gang was amenable to a bribe. The natural results followed—appointments, messages, stolen interviews, and finally a rope ladder, a midnight ride to Cordova, and splendid marriages in the cathedral. The Renegado bore Kadiga on his horse's crupper; she clung to him like a cat, and when fording a stream, he told her to leave him free and hold on by his belt. When the further bank was reached, Kadiga was not to be seen. "What has become of her?" cried the damsels. "Allah alone knows!" replied the Renegado. "My belt came loose when in the midst of the river, and Kadiga was swept with it down the stream. The will of Allah be done, but it was an embroidered belt and of great price."

As one wanders through this marvellous palace, each hall, each gallery and portico, although the style is the same in most, seems for the moment to be the thing most beautiful. Not a mood, not a fancy but has its appropriate chamber. "Whilst

the city below," says Irving, "pants with the noontide heat, and the parched Vega trembles to the eye, the delicate airs from the Sierra Nevada play through these lofty halls, bringing with them the sweetness of the surrounding gardens. Everything invites to that indolent repose, the bliss of Southern climes; and while the half-shut eye looks out from shaded balconies upon the glittering landscape, the ear is lulled by the rustling of groves and the murmur of running waters."

In some of these chambers one could repose oblivious to all the outside world, listening only to the plashing of the waters into the marble basin, and communing with one's inmost thoughts. From others the outlook is into beautiful secluded gardens. A step on to a balcony, and such a view is to be obtained as defies description—the green pastures of Granada, each in a setting of pure white buildings; the fertile Vega, its white farmsteads shining like pearls amid the verdure of emerald green; the glorious peaks of the Sierra Nevada, flaked with perennial snow and glowing in the sunshine; and, far below, the river Darro boiling along its rocky course to its junction with the Xenil. And when one has viewed and re-viewed (with greater delight which comes of greater acquaintance) each detail of the building, let the visitor recline on one of the window ledges of the magnificent hall of the ambassadors and give his fancy range.

Here did John Juan de Vera demand from Muley Aben Hassan, the King of Granada, in the name of his Suzerain Isabella of Castile, the tribute of 2,000 pistoles of gold and 1,600 Christian slaves, or, in default, an equal number of Moors to be surrendered as slaves, which had been exacted by St. Ferdinand. And here was the bold answer given: "Tell your sovereign that the Kings of Granada who used to pay tribute in money to the Castilian crown are dead. Our mint at present coins nothing but blades of cimeters and heads of lances."

When Hassan commenced the war which was to shiver his kingdom by the plunder of Sahara, it was in this hall that his subjects penetrated with the wail: "The peace is broken! The exterminating war is commenced! Woe, woe to Granada!"

These walls witnessed the massacre by Hassan of his sons, and the quarrels of his Christian and Moorish wives, and the flight from his father's wrath of Boabdil el Chico. They saw Boabdil triumphing in his brief success over his father and El Zagal, and returning here moody and sullen after he had plighted his faith to King Ferdinand. From the gallery of this hall he looked forth at the burning camp of the besieging Christians, and saw the towns of Santa Fe arising on the command of Isabella from the ashes of the tents. Here he bade farewell to his nobles, when with a sore heart he bade a last good-bye to palace and kingdom. And when the cross had surmounted the mosque and Christian chants had echoed through the building, in this hall sat Ferdinand and Isabella, when Columbus, kneeling before them, expounded his plans for the discovery of America. He asked leave to add a new jewel to a crown just ornamented with a new kingdom. The jewel was to be a new world.

I have, I fear, wearied you with this diffuse description, but, indeed, I could not pass over the beautiful palace as a mere series of subjects for the camera.

You may imagine how deep was my despair when I was told that one was not allowed to photograph in the palace without a permit. But I had no difficulty in obtaining from Senor Conheras, the Government architect, the necessary official pass. This threw open all doors and made the attendants my servants. I could go in and out as I pleased, and ramble through the lovely halls, and photograph at ease. It was indeed a very dream of photography. The light was intense, and illuminated in turn every aspect of the building. There was no crowd of people to get in the way, and the delicate white traceries and mouldings were just those which photography can best be relied upon to portray.

Outside are two photographic establishments where accommodation for changing plates was most kindly afforded. The two proprietors take it in turn to photograph inside in the palace.

I was startled to see in the Court of Lions a group in flowing Moorish dress—a lady and two men. Surely, I thought, here are some Moors who have journeyed up from Malaga to look mournfully on what was once theirs. But I soon saw that they were Americans masquerading in Moorish dress. It was a device of my friends the photographers, and a good thing they made of it, they told me.

(To be continued.)



## Gelatino-Chloride of Silver Paper ; its Manipulation.

By J. C. S. MUMMERY.

THE title of my paper as it appears upon our calendar, covers rather a wide field, and I will ask you to take what I have to say for the description of the process as I am in the habit of working it. I wish more particularly to address my remarks to beginners or to those of you, if such there be, who have not as yet done much with this particular material.

In the year 1865 Mr. G. Wharton Simpson introduced a process of silver printing called the collodio-citro-chloride process, or Simpson type, in which the sensitive salts were held in suspension by collodion, and from which very fine results were obtained, but, owing to the favour which albumenised paper obtained, Mr. Simpson's process did not continue in very general use.

Captain Abney in 1882 discovered and suggested the use of an emulsion of chloride of silver, citrate of silver and gelatine for printing out, and in 1885 the late Mr. J. B. Obernetter put upon the market his gelatine emulsion paper; Liesegang and Trapp manufactured the paper commercially in the following year, and the Blackfriars Sensitising Company introduced its manufacture into England in 1890, since which time the Ilford Company have taken up the production of print-out paper, manufactured upon somewhat similar lines and apparently at a considerable reduction in price. I cannot enter into the details of the manufacture of gelatino-chloride paper, but will merely say that the paper generally used has a prepared surface and is known as baryta or chalk paper, such as is used for collotype, in which the surface is coated with an insoluble film of gelatine and barytes or other substance. The prepared paper is coated with an emulsion of gelatine and sensitive salts of silver, made much after the manner of the ordinary gelatino-bromide emulsion for plates, and applied by hand or machinery; the paper is then dried and is ready for use. In this state we receive it sometimes a little older than it might be. The particular advantages it possesses are in the first place its suitability for weak negatives, for negatives which are wanting in what is commonly called "pluck," far better results being obtainable with this than with ordinary silver paper. By the use of green glass in printing, even negatives of exceptional weakness may be made to yield quite good results upon those papers containing citrate of silver (Obernetter and Aristotype are, I believe, of this description), the reason being that silver chloride and silver citrate, which enter into the composition of the emulsion, are differently affected by light. Chloride of silver is principally sensitive to the ultra-violet rays, and citrate of silver to the blue rays and some distance into the green of the spectrum. Now the citrate of silver, which is sensitive to the green rays, gives greater contrast to the resulting print than does the chloride, so by stopping out all but the green rays we obtain the greatest amount of contrast from the citro-chloride. There is another advantage of a similar description which citro-chloride presents, that of printing quicker in the winter time when the ultra violet rays of the spectrum, to which chloride is most particularly sensitive, are very deficient. The rapidity of printing is very considerably greater at any time of the year than is the case with ordinary albumenised silver paper, like which it is particularly adapted to combination printing from two or more negatives, nothing being left to guess work or unaided experience, as with platinotype or bromide, and if kept dry may remain a long time in the printing frame without apparent deterioration.

The range of tone obtainable at will is very considerable, and reds and warm browns, purples and blacks may be obtained with certainty, provided always that the print is suitable. There is a photographic saying that the tone of a print is settled when it leaves the frame, which is doubtless true of most printing-out processes requiring toning, but we have, I think, in this case far greater range than with albumenised paper or other processes. The ease with which the surface of the paper can be manipulated is a particularly useful feature from an artistic point of view. We can by roughening the surface to a certain extent tone down the brilliancy of strong contrasts and partly kill the painful detail and small flickering lights often so confusing in photographs, or accentuate the detail and piquancy by burnishing to almost any required degree, or again the surface may be left in its natural state or just slightly dulled.

Of all the qualities of a photographic printing pattern there is one which is or ought to be of more importance than any other, that is the permanency of the result. We all know the unstable nature of the average silver print, and the yellow richness which often robs it of its charms within a year or two of its production, and such of us as admire the advantages and beauties of a process which has held its own so long in spite of inherent decay, should be glad to welcome a material of a similar kind of certainly higher capabilities, and containing the elements of vastly greater permanency. The reasons upon which the claim for greater permanency is based are these, that not only is the sensitive film composed of a definite silver compound emulsified in gelatine, whereas in the albumenised silver paper we have a very unstable compound silver-albuminate, but the emulsion is spread upon a prepared surface and is cut off from and does not sink into the texture of the paper: it is consequently washed with greater ease and efficiency, the disintegration of the paper and size consequent upon prolonged washing of silver prints being unquestionably a considerable factor in their destruction. It is of course necessary if the most permanent results are to be obtained, that the prints should be thoroughly well fixed, the hypo effectually eliminated, and suitable boards and materials used for mounting. There are certain general rules relating to the various manipulations which must be closely attended to, or without doubt the results will be partial or complete failure. The ways and customs of ordinary silver printing must be put on one side, for the material is different and requires a different treatment. Care is to be exercised in handling the paper, especially when wet, as then the surface is very susceptible of injury. The hands and dishes must be clean, and the latter used always for the same purposes, whilst hypo must be carefully guarded against, as the faintest trace before or during toning will stain the prints. The storage of the papers requires careful attention, and it will then keep for the most part in good condition for a considerable time if the air, light, and damp are effectually excluded. The best way, I believe, to store it is under pressure. I have myself used Aristotype paper which has been kept several months and stored for four or five weeks between printing and toning without any appreciable sacrifice of its good qualities.

The papers to which my remarks refer are Obernetter, Aristotype, Celerotype, and Ilford, these being the only brands which I have used. Personally, I prefer the Celerotype and Aristotype for warm tones, and the remainder for purple or black. They all give a remarkable amount of detail, and are well packed up and sent out.

Prints are made by contact and exposure to daylight in the ordinary manner. Any negatives, excepting those of exceptional density, are suitable for the process; those of a weak character showing to proportionately greater advantage. The negative is prepared as usual for silver printing or any other process, but above all things, if of any value, it should be varnished, or the free silver will quickly stain it beyond recognition, especially if any trace of damp be present. The silver stains may not show at the time, but I have seen it develop afterwards. Lengthened printing in the open air in winter time will bring a rich harvest of stains. In placing the paper in the frame it is always desirable to dust the negative and paper with a camel-hairbrush, as dust will leave white spots; and to have the back of the negative clean a thick pad of blotting-paper or felt behind the paper is also very desirable. All possible care should be taken not to expose the paper to any but very dull or artificial light, as by reason of its sensitiveness it will rapidly become darkened. The same care must be exercised whilst examining the print, which should always be removed into a dull light before the frame is opened. Printing should never be carried out in direct sunlight, excepting with negatives of too great a density, and for any negative inclining to weakness a very subdued light will give the best result. One, two, or three thicknesses of tracing or any other translucent paper pinned over the face of the frame will work wonders with thin negatives, especially where masking out and printing-in of skies or other portions is resorted to. As regards the extent to which printing should be carried, it is, I think, generally desirable to continue exposure until the darkest parts become bronzed, though this may not be practicable with some negatives. The bronzing will be lost in toning and fixing, as will also a considerable amount of the depth of the print, and proper allowance (to be gained only by experience) must therefore be made for this.

\* Read before the South Middlesex Photographic Society.

(To be continued.)



## Exhibitions.

### LINCOLN CAMERA CLUB.

ON the 8th inst. the Right Rev. the Lord Bishop of Lincoln (Dr. King) opened a most interesting photographic exhibition at the Schools of Science and Art, Lincoln, which is being held under the auspices of the Lincoln Camera Club. It is noteworthy that at the exhibition under notice no prizes are offered, a departure being taken from the practice which has obtained all over the country of awarding medals. The present display has been got together by means of special invitations being sent out to well-known men, and the exhibits which form the nucleus of the whole have come from the exhibition of English Art Photography recently held in Brussels. A most striking feature in the exhibition is the numerous examples of what might be termed the new school of photography, the pictures being produced upon the roughest Watman's drawing paper, instead of on the glossy surface commonly associated with photographs. The effect of this is to give the picture the appearance more of a drawing than a photograph. One of the great tendencies of the present day seems to aim at making a picture having a "matt" surface, instead of showing the well-known bright surface of albumenised paper. Among the examples shown on rough-surface paper may be mentioned those of Mr. Eustace Calland, of Putney, who shows "In the Month of May" and "An Old Wharf," and Mr. George Davison, Secretary of the London Camera Club, who, in "A Piece of Marsh Land," shows us how to make a picture out of next to nothing, by means of the camera. He also has on view "A Farm House," "A Country Winter Scene" and "An Oyster Creek," all displaying the great development which the art has taken. Probably in this connection "Telford Bridge" is one of the most charming of Mr. Davison's examples. In the rough-grained paper section Mr. A. Horsley Hinton has "The Evening Ebb," "October," "Summer Breezes," and "Salt Marshes, Essex," which have the effect of most beautiful engravings. Mr. Bernard Alfieri, of London, in his exhibits goes a long way to discount the assertion of many brush artists that a real picture cannot be made out of a photograph. His "December Sunset," "Winter," and "A Marsh Harvest" are masterpieces, and he shows a curious effect of sunlight through mist. Mr. F. P. Cembrano, of Richmond, shows noteworthy pictures of "Twilight" and "Sunset in Winter." Mr. H. P. Robinson represented by a large photograph, "Bringing Home the May," which was taken as long ago as 1862 or 1863. It showed what could be done in those days, and when first shown it created a great sensation. It is very interesting now, as showing that the real advance which has been made in photography during the intervening period has been rather in the direction of rapidity in working than in anything else. Mr. Robinson's well-known "Autumn" and "Preparing Spring Flowers for Market" are also on view. "A Primrose by the River's Brim" is a capital study by Mr. Ralph W. Robinson, but a still more pleasing picture is that of "Don't You Wake," representing a child nursing a doll and keeping watch and ward over a sleeping baby and a sleeping dog. Mrs. S. F. Clarke, of Louth, sends twelve very excellent photographs; the one which will most please the visitors is "The First Step," depicting a youth and maiden. The girl stands on the first step of a ladder, and the youth is apparently making his first step in an assault upon her heart. Mr. Clarke has also a well composed picture, "Love's Young Dream." Mr. Lyd. Sawyer, of Newcastle, shows "On their own Hooks," a study of boys fishing from a quay, and "In the Twilight," a pretty picture, excellent in tone; while Mr. Van der Weyde, of Regent Street, has some finished examples of portraiture in groups and singly, specimens which cannot be surpassed for excellence of workmanship and true artistic feeling. A series of portraits of judges, having the appearance of mezzotint engravings, are sent by Mr. William Crook, of Edinburgh, and his contributions also include a portrait of John Mackenzie, which took the gold medal at the International Exhibition at Edinburgh in 1890. Mr. W. Winter, Derby, sends a good collection of characteristic work, and Mr. J. Byrne, of Richmond, is represented by life-size direct portrait work, and a frame, "The Alphabet," a number of clever studies of children. Mr. Adam Diston, of Leven, Fife, has five small genre studies, including his well-known "In the Gloaming," and Mr. Robert Terras and other Scotch exhibitors show the same class of work. Whitley scenes

and characters are shown by Mr. F. M. Sutelcliffe, including remarkable examples of wind-blown trees and sky. Mr. Robert Slingsby, of Lincoln, shows some beautiful specimens of flash-light work. They hang side by side with the daylight pictures, and his portraits of a lady (full length) and a lady's head and bust and of himself, challenge comparison with the best of the ordinary work. There is also the flashlight photograph of the Mayor of Lincoln's fancy dress ball and of smoking concerts. In the pictorial section Mr. Slingsby is represented by some well-known pictures which have taken prizes at various exhibitions. Some enlargements from photographs taken on the Lincolnshire coast with a hand-camera show what good work can be done in this way when the manipulation is in the hands of an expert. Mr. Slingsby also has a recently taken picture showing the view up High Street, Lincoln, with the last snow of the past winter on the ground. Mr. Hadley, Lincoln, has several fine examples of portraiture in platinotype, and some genre studies of finished character. Other exhibitors are Messrs. West and Son, Southsea, Mr. H. G. Conybeare, Ingatstone. Mr. F. W. Whaley, late of Lincoln, who shows for the first time an admirable study, "Worn Out," in which the expression is remarkably good; "A Tale of the World," which was awarded the silver medal at the International Exhibition, held at the Crystal Palace, for the best picture in the exhibition, which had never been previously exhibited; and "Your turn next, sir," which took the gold medal at Oldham, silver medal at Calcutta, and awards at several other exhibitions. Mr. W. Barry, Hull (direct work printed in carbon), the Birmingham Photographic Company (examples of the Kallotype process of printing), the Autotype Company, London, and the Berlin Photographic Company, who show a photograph of Luke Fildes' picture "Venetians," and one taken direct from the original painting of Raphael's Sistine Madonna. Mention should also be made of the hand-camera exhibits of Mr. Austin Edwards, who is quite *au fait* in this department, and of Mr. Welford, of Birmingham, editor of the photographic *Review of Reviews*. Mr. Caleb C. Smith, of Lincoln, has a fine show of photographic apparatus and material in the painting room on the same floor as the exhibition. The exhibits of members of the club are located in Painting Room No. 6, where also a case of lantern slides is shown. The work of the members is very praiseworthy, most notable views being shown by the President (Dr. Stott) and other members of the club.

## Societies' Meetings.

**Durham.**—The first outing took place on 6th inst., the rendezvous being Alnwick. His Grace the Duke of Northumberland kindly granted permission of access to the ancient castle, grounds, and surroundings, and every facility was given for photographing. After numerous exposures on the castle from varied points, the party drove through the park to Hulme Abbey, and returned by way of the dairy grounds, where some capital views were obtained. After partaking of an excellent dinner at the Star Hotel, the party returned to Durham, having spent a most enjoyable outing with fine photographic weather.

**Exeter.**—General meeting on the 7th inst. Mr. Langdon gave a very interesting address, copiously illustrated by blackboard diagrams on the astronomical telescope, its construction, and use in connection with photography. After a brief sketch of the history of astronomical research, and the difficulties experienced by early workers in getting glass large enough and suitable for object glasses Mr. Langdon passed to the actual construction of a telescope. Here he was able to speak with authority, having himself, in an out-of-the-way village, and in the face of enormous difficulties, successfully completed a nine-foot reflecting telescope. He described his method of construction in detail. The tube was formed of zinc rolled upon a wooden mould, then soldered, and bound with bands. The glass reflector was ground on an iron disc, with various degrees of emery powder, then on one coated with pitch, and finished off with jeweller's rouge. The silvering of the finished article he did not recommend the amateur to attempt. The clockwork arrangement for giving the necessary equatorial motion to the instrument was the next thing to be attempted, and in this, after some trials, he was completely successful. At the conclusion of his address, photographs were shown of the sun and the moon, taken in the telescope, which were much admired. The latter planet, owing to its proximity to the earth, offered greater facilities for investigation, and of it Mr. Langdon has made a very minute copy in plaster, with enlargements of some of the more prominent craters. He invited the members to



come and inspect his work, which many of them are most anxious to do. It may be added that he has some of the best photographs of the "Flying Dutchman" that have been taken of it.

**Hackney.**—On the 9th inst. the usual meeting was held, Mr. W. P. Dando in the chair. Samples of the Barnet plate were distributed. The Hon. Secretary reminded members that after this month meetings would be held every Tuesday at 206, Mare Street. Mr. Dean asked how it was he had been troubled with silvering on Ilford Isochromatic plates. Mr. Beckett said it was probably due to having forced the plate, or the fumes of gas having come to them. He advised the use of a wash-leather and methylated spirit, which would remove silvering. The chairman said he had taken a view in Epping Forest last Wednesday as late as 6 p.m., under trees, with  $f/44$ , and gave a 20 sec. exposure, and had to develop it very carefully. The subject was a very dark one. Mr. Beckett showed a picture taken in the Forest in which he had given over twenty exposures, making over 1 minute's exposure, the trees being moving at the time. Mr. Gosling showed a snap-shot exposure of tennis players. Mr. Sodean handed round some microscopical work done on the Imperial plates, which he said he was pleased with. Mr. Hensler asked which was the best exposure for clouds, fast or slow. It was said that a slow exposure late in the day would do, but in the middle a very rapid exposure was essential. Mr. Sodean then gave a very good account of lenses, single  $v$ . rapid rectilinear, using diagrams. The chairman liked single lenses when they were good, but he said they were hard to get. Good makers made a speciality of them. He had used them on architectural subjects successfully, and handed round several prints he had taken in France with single lenses of 9, 12, and 15 inches foci, at an aperture of  $f/8$  or  $f/11$ . The subject then turned to a discussion on halation. Films were considered more rapid than plates, and prevented in a marked degree halation. Mr. Beckett had tried several backings, but preferred that given by Mr. Teape, which was:—1 oz. caramel (allow a little extra, say one-third, for waste), 1 oz. burnt sienna, 1 oz. methylated spirit, 1 oz. water; boil until sugar has lost its taste, which would be about one and a half hours. Mr. Hensler had used several backings; had used among them Bates' black, which was very dirty. The chairman said he had reduced halation by using methylated spirits with its equal amount of water. It was a tedious operation, but an interesting book read to him whilst doing it tended to reduce the ennui.

**Harlesden and Willesden.**—On 4th inst. an excursion was made to Stanmore, under the leadership of the President, Mr. John Naylor. The outing was most successful, the attendance very good. Some charming views were secured of the old and new churches and other picturesque spots in the neighbourhood. The day's enjoyment was completed with a musical and sociable evening at the President's house. The next excursion will take place on Saturday next, June 18th, to Cassiobury Park, Watford, under the leadership of the Secretary. Members will meet at the booking office, Willesden Junction, at 2.30 p.m. Amateurs desirous of joining the society are invited to communicate with the Hon. Secretary, Mr. Woodbury, 23, Fairlight Avenue, Harlesden, N.W.

**Holborn.**—On the 10th inst., Mr. A. Horsley Hinton, President, in the chair, Mr. E. Clifton gave an interesting lecture on "Developing in Practice," dealing only with development by pyro. He dealt first with the dark-room. The most important thing was the light, and daylight should be dispensed with, having oil or gas as the source of light. The next most important point was cleanliness. Many of the mysterious marks and streaks on the plates were due to a dirty and sloppy bench. With regard to developing, Mr. Clifton said the preliminary soaking of the plate in water before developing was no great advantage and gave rise to air bubbles. The best developer for amateurs who had to develop plates exposed on various subjects was pyro-ammonia, using the various ingredients in 10 per cent. solution. For portrait work the soda developer was the best. He had found that the general fault with amateurs was under-development. The plate was not sufficiently developed until the image seemed to be disappearing from the plate, and on turning it over the high lights were showing through the bromide. It was better to carry the development too far and then to reduce, than to under-develop and intensify. The influence of the temperature on the developer was very great on the density and brilliance of the negative. In the summer the alkalies should be reduced. A very good cure for green fog was to immerse the plate in a weak solution of bichloride of mercury for a very short time. This solution would also get rid of metallic lustre sometimes seen round the edges of stale plates.

**Kimberley (South Africa).**—The annual general meeting was held on the 13th ult., when the following were elected as office-bearers for the ensuing year:—President, Rev. Father Ogle; Vice-President, Mr. F. Skead, B.A.; Hon. Secretary and Treasurer, Malcolm Macfarlane; Council, Messrs. C. A. Chappell, A. Gasson, and J. Henry.

**Lewes.**—An ordinary meeting was held on the 7th inst., the

President (Mr. J. G. Braden) in the chair. Mr. J. Whittall was elected a member of the society. Mr. E. J. Bedford read a paper on "Perspective as applied to Photography: the use and abuse of wide-angle lenses." He explained by means of diagrams on the black-board the points connected with linear perspective, and which were necessary to know in order to fully understand the action of a wide-angle lens. At the conclusion of the paper a discussion took place. The President announced that as he would shortly be leaving the town he would be obliged to resign his post, a proceeding which he much regretted, as he had held it since the commencement of the society in 1888. He congratulated the members on the flourishing state of the society, and said he should still continue a member and watch with interest its proceedings. On the motion of Mr. J. Tunks (Vice-President), a hearty vote of thanks on behalf of the members was proposed to the President for the able way in which he had presided over the society and which in a great measure accounted for its successful career so far. This was seconded by Mr. E. J. Bedford, and carried unanimously. Mr. Bedford then proposed, on behalf of himself and the members, a hearty vote of thanks to Mr. Percy Morris for the able way in which he has conducted the secretaryship since the commencement of the year, and which he has had to resign in consequence of leaving the town. This was seconded by the President and carried unanimously. Several prints were shown by the members present, after which the meeting terminated. An excursion takes place on Saturday to Herstmonceux Castle. The Eastbourne Society will join. The train leaves Lewes at 12.10 o'clock.

**Lewisham.**—On the 3rd inst. a meeting was held, Mr. Alf. H. Miles, Vice-President, in the chair. Through the continued ill-health of the Secretary and Treasurer, Mr. Davidson, he has been obliged to resign, greatly to the regret of all the members. Mr. R. W. James, M.I.C.E., 75, Tyrwhitt Road, Brockley, S.E., was unanimously elected to succeed him, and Mr. Davidson was elected on the committee. After that business, Mr. H. Bedford Lemere gave a practical demonstration of "Architectural Photography." He showed the camera and stand he principally used, which were of very substantial construction, as he said it was of the very utmost importance that everything should be perfectly rigid, as a large number of interiors took upwards of four hours' exposure; he also showed a regular battery of lenses, which he always found it necessary to take with him. He illustrated his remarks by passing round a number of magnificent prints (mostly platinotypes) showing a wonderful amount of detail and an utter absence of hardness.

**North London.**—On the 7th inst., Mr. J. Traill Taylor in the chair, the members of this Society (and a goodly number of visitors) met to hear a discourse by Mr. Redmond Barrett on "Retouching." Dealing with the ethics of the art, both from an artistic and a commercial point of view, Mr. Barrett pointed out the purpose of retouching, and described very clearly what should be done, and what left undone, interspersing his remarks by several amusing anecdotes of personal experiences, and illustrating them by a considerable number of specimens of different classes of work. In conclusion he promised to give the Society another evening later in the season, for the purpose of actual demonstration upon a number of negatives to be provided for the purpose. A conversation followed. Next meeting, June 21st, Mr. J. Traill Taylor on "Photographic Lenses, Ancient and Modern;" visitors are cordially welcomed.

**South London.**—Ordinary meeting 8th inst., the President, Mr. F. W. Edwards, in the chair. A number of photographic works were added to the club library, and several new members were elected. A paper was read by Mr. A. Horsley Hinton on "Our Aim in Landscape Work: some Suggestions, practical and otherwise." The lecturer dealt with many matters relating to the application of art to photography, so that any of the members present might turn his suggestions to account on the next field excursion. To start some thinking, and to awaken fresh ideas, and to produce artistic pictures was his wish. If a picture was to express the repose of evening, the sentiment of repose is strongly awakened by the scene selected; inversely, if the scene which arrests attention and moves one to seek its reproduction, suggests, when quietly studied, repose, then the finished picture should also suggest the same feeling. If photography cannot do this, its art claims are utterly vain, and art by photography is impossible. After the selection of the subject comes the treatment. Everything in the picture must be subordinate to the sentiment. If there be such an object as a church tower, a bridge, a cottage clearly defined or strongly indicated, so that the spectator on looking at the picture says at once, "Oh! that is so and so church," or, "Isn't that near such and such a place?" it is clear that the component parts of the scene are not subordinate to the sentiment. The remark the picture should suggest is, "That's very restful, so suggestive of evening." Sentiment will never be uppermost when the subject itself is obtrusive. By the very broad or even indistinct representation of the objects, we may avoid overpowering any sentiment which may be suggested; by the suppression of the



material we render possible the expression of the ideal; by the subordination of everything that shall of itself excite interest, we give the spectator an opportunity of discovering and recognising the feeling, the idea which in the first instance impelled us to make the picture.

**Tunbridge Wells.**—A meeting was held on the 9th inst., Mr. George Lewis in the chair. The minutes were read and confirmed, and correspondence read. Regret was expressed that the weather was so unfavourable on the 2nd of June, that the excursion arranged with the Hastings Society to Penshurst Place (by special permission of Lord de L'Isle and Dudley) could not possibly be carried out, much to the disappointment of all concerned. Through the kindness of the Thornton-Pickard Manufacturing Company, several of their shutters were on view, having been sent down specially for the purpose, and included their time and instantaneous, which allows an exposure of any length of time, or from 1-10th to 1-90th of a second; the instantaneous and snap-shot for hand-cameras; and the special instantaneous, which gave an exposure of from 1-10th to 1-200th of a second. They were all well made and looked capable of all that was indicated they could do. Mr. Bottomley brought one of Voightlander's shutters working between the lenses, the Chairman bringing Wollaston's diaphragmatic, also working between the lenses, and an old stereoscopic flap shutter made by Dallmeyer years ago; Mr. Morgan, Sands and Hunter's, and the Optimus Plunge; Mr. Cassingham, Delicate's self-portrait shutter, which enables one to take a portrait of oneself, or a group containing the operator, and Tylar's window blind, and a Thornton-Pickard stereoscopic shutter; Mr. Whitrow also bringing one of much the same description as the window blind, made by himself. Mr. Cassingham also brought a very useful finder, made by Messrs. Clement and Gilmer, and a walking-stick camera stand, which was very firm. A long discussion ensued as to the capabilities of the different shutters.

**Walton.**—The ordinary meeting was held on 1st inst., Mr. J. Kennedy in the chair. The Secretary distributed to the members the new paper *Photographic Work*, kindly sent by the editor of that paper. The subject of the evening was a demonstration on printing with aniline by Mr. T. Bickerstaff. While Mr. Bickerstaff was preparing the chemicals for his demonstration, the Secretary exhibited a new double dark-slide which was only three-eighths of an inch thick, also a stereo shutter for his Stereo hand-camera. Upon Mr. Bickerstaff proceeding with his demonstration he explained how the paper is sensitised with a solution of bichromate and phosphoric acid, then exposed under a positive; the paper then goes through a sort of fuming process with aniline mixed with benzoline, by which method the print is developed; the print after developing can be changed to a variety of colours by after treatment with chemicals as Mr. Bickerstaff demonstrated to the members. All communications should be addressed to Mr. W. A. Brown, Hon. Sec., 20, Richmond Terrace, Breck Road, Liverpool.

### SOCIETIES' FIXTURES.

- June 17.—**LEWISHAM HIGH ROAD CAMERA CLUB.**—Demonstration, "Reducing Lantern Slides" by Mr. R. W. James. Exhibition of Competition Negatives.
- " 17.—**RICHMOND CAMERA CLUB.**—Informal Meeting.
- " 18.—**WEST SURREY PHOTOGRAPHIC SOCIETY.**—Outing to Cobham.
- " 18.—**GRAPHIC SOCIETY (Plymouth).**—Excursion to Denham Bridge.
- " 18.—**PEOPLE'S PALACE PHOTOGRAPHIC CLUB.**—Outing to St. Albans.
- " 18.—**RICHMOND CAMERA CLUB.**—Excursion down the River.
- " 18.—**OLDHAM PHOTOGRAPHIC SOCIETY.**—Outing to Monsal Dale.
- " 18.—**ELIZABETHAN PHOTOGRAPHIC SOCIETY.**—Outing to Penshanger.
- " 18.—**CROYDON.**—Excursion to Guildford (half day).
- " 18.—**CARDIFF PHOTOGRAPHIC SOCIETY.**—Ramble to Coedriglan Park, near St. Fagans.
- " 18.—**LONDON AND PROVINCIAL PHOTOGRAPHIC ASSOCIATION.**—Outing down the River.
- " 18.—**EXETER.**—Excursion to Countess Weir.
- " 18.—**STOCKPORT PHOTOGRAPHIC SOCIETY.**—Ramble to Miller's Dale.
- " 18.—**S. LONDON.**—Excursion to Waltham Abbey.
- " 20.—**LEEDS.**—AMATEUR PHOTOGRAPHER 1891 Prize Slides.
- " 20.—**S. LONDON.**—"Hand-Camera Work," by Mr. J. A. Sinclair
- " 21.—**N. LONDON.**—"Lenses, Ancient and Modern," by J. Traill Taylor.

- June 21.—**OLDHAM.**—Outing to Ashbury's for Belle Vue.
- " 22.—**BEDFORD.**—Excursion to Silsoe.
- " 23.—**EAST LONDON PHOTOGRAPHIC SOCIETY.**—Excursion to St. Albans.
- " 23.—**NORTHAMPTONSHIRE.**—Excursion to Olney.
- " 23.—**LONDON AND PROVINCIAL.**—"Intensification."
- " 24.—**RICHMOND.**—Show of Prints.
- " 24.—**HALIFAX.**—Annual Meeting.
- " 25.—**PAISLEY.**—Excursion to Cadzow.
- " 25.—**OLDHAM.**—Outing to Bolton Abbey.
- " 25.—**BRIGHTON AND SUSSEX.**—Excursion to Alfriston.
- " 25.—**CROYDON.**—Excursion to Marden Park.
- " 25.—**CARDIFF.**—Excursion to Pencoed Caves.
- " 25.—**HALIFAX.**—Annual Meeting.

Isaac Walton's disciples have now a weekly penny paper specially devoted to their interests, viz., *Angling*, a brightly written and well printed paper published at 52, Fleet Street, E.C.

**Notice** is hereby given of the consolidation of the Eastman Company with the New Process Film Company, under the name of the Eastman Kodak Company. All contracts and liabilities of the old Company have been assumed by the new Company. Officers:—President, Henry A. Strong; Vice-President, J. H. Kent; Secretary, B. H. Clark; Treasurer and Manager, George Eastman. Trustees:—George Eastman, Henry A. Strong, John H. Kent, Brackett H. Clark, Edwin O. Sage, George Ellwanger, Henry C. Brewster. Rochester.—George Eastman, 1880; the Eastman Dry Plate Co., 1881-1884 (Strong and Eastman proprietors); the Eastman Dry Plate and Film Co., 1884-1889; the Eastman Company, 1890-1892 (capital, 1,000,000 dols.); Eastman Kodak Company, 1892 (capital, 5,000,000 dols). London.—The Eastman Dry Plate and Film Co. (branch), 1885-1889; the Eastman Photographic Materials Co. Ltd., 1889 (capital, £200,000).

**The Greenwich Observatory.**—The 4th inst. being what is commonly known as Visitation Day, the Royal Observatory at Greenwich was thrown open to a number of invited guests, who were permitted to inspect the various branches of astronomical work now in progress under the able superintendence of Mr. W. H. M. Christie, the Astronomer-Royal. The large new telescope, which has been so long in course of preparation, was not on view, for, although its immense object-glass—28 inches in diameter—is already in possession of the Observatory, the 36 foot dome intended for the reception of the instrument is still far from complete. In the course of a few months it is to be hoped that our British astronomers will be in possession of an equatorial which will enable them to compete as regards equipment with the leading Continental observatories—such as Paris, Vienna, and St. Petersburg. A new transit pavilion was open to inspection in the Front Court, and important observations are now being made with a view to the determination of the longitudes, Montreal—Congo—Waterville—Greenwich, Waterville being at the western extremity of the great European arc of longitude. The instrument used for the International Photographic Chart of the Heavens attracted much attention, and some fine star photographs were on view, including two or three negatives showing the recent new star in Auriga. The photographs of sun spots were also of great interest, the immense group of February 5—18th last being the largest ever photographed at Greenwich. According to the annual report of the Astronomer-Royal, it would appear that the solar activity has increased in a remarkable manner during the past year. In 1890 there were as many as 175 days without any spots, but in 1891 there were only twenty-one such days, while since the 28th of March, 1891, the sun's face has not been free from spots for a single day. The great spot observed at the middle of February was attended by a violent magnetic disturbance, and from recent inquiry it is seen that magnetic storms almost invariably occur either at the time when unusually large spots are seen near the centre of the solar disc; or when some great change is taking place in the aspect of the spot. As a fresh example of the accuracy of the great Westminster clock, the Astronomer-Royal reports that in the course of the year ending May 10th, 1892, the error was insensible on 58 per cent. of the days of observation. On 30 per cent. of the days the error amounted to only one second, on 7 per cent. to two seconds, and on 4 per cent. to three seconds while on only 1 per cent. of the days did it reach as much as four seconds. The meteorological work of the Observatory is maintained in its ordinarily efficient state. The mean monthly temperature in 1891 was below the average in all months excepting June, September, October, and December. The greatest daily movement of the wind was experienced on December 10th last, when the mean hourly velocity was forty miles; the least was on February 23rd and 24th, 1891, when the mean hourly velocity was less than a mile and a half.



## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### RULES.

1. Write clearly and distinctly on one side of the paper only.
2. Write each Query or Answer on a separate sheet of paper.
3. Write the name and address legibly on the back of each communication, and sign all Queries and Answers with name or *nom de plume*.
4. All matters for these columns **MUST** be received by **TUESDAY MORNING'S POST**.
5. The Editor does not undertake to answer questions by post.
6. In answering Queries, correspondents are requested to mention, in every instance the *number and full title of the query* referred to.

## QUERIES.

5719. **Gold Depositing.**—Will some one kindly explain why gold deposits in toning bath? I have just used a bath of the following formula. The gold began to deposit soon after the prints were immersed:—

### Stock solution—

|                          |         |
|--------------------------|---------|
| Borax .. .. .            | 330 gr. |
| Acetate soda .. .. .     | 180 "   |
| Bicarbonate soda .. .. . | 90 "    |
| Distilled water .. .. .  | 20 "    |

### Bath—

|                         |          |
|-------------------------|----------|
| Stock solution .. .. .  | 10 drms. |
| Chloride gold .. .. .   | 1 gr.    |
| Distilled water .. .. . | 10 oz.   |

I have used this bath before with success, and am at a loss to know why it has now failed. I have known an ordinary borax bath work well for a time, and then on some other occasion deposit. If some chemist will be so good as to explain the cause of precipitation of gold I am sure many readers will be very grateful. The question has often been asked, but I never remember seeing it clearly answered.—**AMATEUR.**

5720. **Hypo.**—Will hypo keep well in a glass jar with cover, or should it be stored in the dark? How long is it safe to keep in solution? Answers to these questions will be valued.—**G. H. J.**

5721. **Film Carrier.**—Would any of your readers kindly say where I can purchase a light film carrier of such construction that when the carriers are packed close in a magazine the film surface will not be rubbed by this back of the carrier next it?—**J. CARLTON STITT.**

5722. **Long Focus.**—Will any of your readers kindly say what would be gained, in landscape work, by using the single lens, part of a good 7 in. focus R.R., instead of the double lens? Would it be worth while to have the camera lengthened for this purpose? At present it is only long enough to focus when the lenses are used in combination.—**HERNARD.**

5723. **Instantaneous Work.**—I want to take a horse trotting. Could anyone say what plate, stop, and size on ground-glass; or how to go to work so as to secure a good picture? My lens works at f/8, and is 13 in. focus, using full aperture, and with image of horse 2 or 2½ in. long on ground-glass. What speed must shutter work at so as to get the picture be sharp, and will the properspeed of shutter, whatever it should be, give a fairly fully-exposed negative, say on Paget xxxxx plates?—**AMATEUR.**

5724. **Developing.**—In developing instantaneous work, what way is really the best? To flood the plate with ammonia stock solution, use energetic developer, or dilute both pyro and ammonia?—**AMATEUR.**

5725. **Touring.**—How do exposures in Switzerland compare with those necessary in England at same time? Which is the best kind of plate to use for hand-camera views containing mountains; one of medium rapidity as the Paget xxx, or a slower plate, or an Isochromatic plate, as Edwards' medium used without a yellow screen? Whenever possible, I should use a portable stand, and give time exposures. In order to get plates safely through the customs, is it better to pack them with general luggage, or in a separate case, to be carried in the hand? Are English plates, Paget specially, obtainable at Basle and the larger Swiss towns? Are there as many chances of getting "run in" by the military when photographing in Switzerland as in Germany? Shall be glad of this and any other information.—**H. C. LEAKE.**

5726. **Negative Making.**—Would any reader of the **AMATEUR PHOTOGRAPHER** tell me how to make a negative from a print so that other prints can be obtained, and also lantern-slides?—**G. T. READ.**

5727. **Great Marlow.**—As I am about to spend a month at this place, I shall be glad to know if there is a dark-room there; also if Ilford ordinary plates can be obtained there?—**G. T. READ.**

## QUERIES UNANSWERED.

- May 6.—Nos. 5660, 5662.  
 ,, 13.—Nos. 5670, 5672.  
 ,, 20.—Nos. 5680, 5681, 5682, 5683, 5684, 5688, 5689, 5690.  
 ,, 27.—Nos. 5694, 5695, 5696, 5697, 5698, 5699, 5701, 5703, 5706, 5707.  
 June 3.—Nos. 5709, 5710, 5711, 5714.  
 ,, 10.—Nos. 5715, 5718.

## ANSWERS.

5708. **Norway.**—During a tour in Norway last year I used Wheeler's tables, and found them pretty accurate. Perhaps a little shorter exposure would have been better. Ilford plates can be bought in Bergen and Christiania. Further information if desired (address with Editor).—**NEMO.**

5712. **Silhouette.**—"Perseverer" had better copy this on a slow plate, a photo-mechanical one for preference, and print in platinum type or bromide paper. If, however, he only wants one or two copies, the quickest method would be to trace it out by hand, transfer to black paper, and cut it out in the ordinary way.—**J. G. P. VERKEER.**

5717. **Pyrogallie.**—The staining caused by pyrogallie acid can be got rid of by means of any of the usual clearing baths, such as alum, Adams' brilliant, Edwards' clearing solution, etc. Formulae for these will be found in text books.—**J. G. P. VERKEER.**

5718. **Ingleton.**—The whole Ingleton district is full of "tit-bits" for the photographer. There are a number of waterfalls and fine bits of river scenery within one or two miles of the village.—**H. E. INGLEWORTH.**

## EDITORIAL.

**SPECIAL NOTICE.**—We are very pleased to find that replies in this column are so much appreciated, but we should be very grateful if those requiring advice would send their letters to us **BEFORE TUESDAY MORNING'S POST** if possible. The time occupied in replying in this column is very considerable, and owing to the often late receipt of letters, many matters have to be left over each week. This we much regret.—**ED. AM. PHOT.**

J. H. GODDING.—The camera is efficient and very useful to fit one's own lens on.

E. HOBBS, JUN.—The cause of the reddening of the solution is oxidation of the pyro. This colour will have no prejudicial effect in development.

V. R. 1.—We should certainly choose, in the first place, Nos. 1, 3, 8, in the second place, 12, 15, and 10. If you get the first lot you will want no other lenses at all. Nos. 1, 4, and 7 are certainly of use, but so much depends upon the operator and his work that it is difficult to say whether they are necessary. For instantaneous work, one of No. 8 would do; architecture, No. 1 or 8; groups, 3 or 8; landscape, 1 and 8.

A. WRIGHT.—What you want is a long-focus landscape lens, one at least double the base line of plate—that is, 13 in. for half-plate. Whitby is a very good centre. Dark-rooms: J. Frank, 9, Bridge Street; W. Herbert, Dotchen's Yard; and F. Bowes, Skinner Street. You will find our forthcoming "Annual" useful with hints.

T. C. LANG.—We have used the lens constantly since our article appeared, and it certainly is the most satisfactory we have used yet. The 7 in. would be the most suitable you could get, we think. With regard to lenses of Jena glass being quicker than those made of the old glass, this is somewhat of a fallacy; the only point is that the Jena glass may be more colourless and would then allow more light to pass, but Lainer has made a series of experiments which proved that if a lens of the old glass, which did not show colour, was tested against one exactly similarly made of the new glass, there was no difference between the amount of light transmitted by the two.

DOZEY G.—We have not yet had time to test your bromide paper, though we will do so this week. You cannot use any developer for an indefinite number of plates, probably for more than four, without there being some differences in the results. There is no objection to your sending the print in again as one of a set.

LANKA.—(1) Yes, the group is admissible. (2) Yes, up to standard. (3) Yes. (4) Yes. (5) If development is carried on long enough, there should be no difficulty in getting density, but if required you can add 10 to 20 drops of 10 per cent. alcoholic solution quinal to the developer, when all detail is out, and get all you want.

H. E. ILLINGWORTH.—Under-exposure, or the use of too much bromide of potash; omit half the bromide and try again.

E. C. L.—We should prefer No. 1.

R. C. MACLEOD.—Letter by post.

O'N. F. KELLY.—(1) We should recommend the Suter 12 in. landscape lens. (2) The relative rapidities are, slow, 2½; rapid, 1.

H. A. C.—There is a little too much foreground, and the bridge should not have been cut off so abruptly. We should say that insufficient washing between clearing and fixing is the cause of the yellow stains.

H. BRYANS.—Print duly received. We are trying to get a decent result from it.

W. P. C.—You can obtain special waterproof backing paper for putting on prints whilst on the glass, so as to prevent the surface from showing marks from mounting. Wheeler and Co., Veners, and Percy Lund, or almost any dealer can supply.

J. MACADAM.—The print "Assam Women Weaving" was well arranged, but was a little too black, and not pure in the whites; accidentally omitted.

ST. REGULUS.—All lenses are of "fixed focus," whatever that may be. With a 5 in. lens the focus for 4 ft. will be 5-8 in.; for 6 ft., 5-8 in.; for 9 ft., 5½ in.; for 12 ft., 5-8 in.; for 17 ft., 5-8 in.; for 25 ft., 5-16 in.; for 45 ft., 5-16 in.; for over 60 ft., 5 in. This is what you want, is it not?

H. MARSDEN.—The spots look very much as though they were caused by particles of iron rust settling on the film. You might try a strong solution of oxalic acid, but we are afraid nothing will take them out.

J. C. OLIPHANT.—The sketch has to be redrawn, and we will then insert.

X. Y. Z.—Letter by post.

U. B. SMART.—(1) The plates are reliable, but we cannot say that we think them the best to use. (2) The ordinary films are exactly the same rapidity as the plates.

J. T. THORNTON.—It was evidently an oversight, and shall be put right at once.

WHIELER.—Edwards', The Grove, Hackney, and, we believe, England's offer photo-mechanical plates. Write to J. T. Chapman, or J. J. Atkinson, of Manchester, and enquire for Carbutt's.

L. R. L.—The lens is a good, useful instrument.

SENNA.—You have been very careful to give us every data but the diameter of the aperture of the stop. (1) The lens certainly can be used for instantaneous work with a shutter. (2) and (3) You must use a rapid plate for shutter work. (4) The shutter named is a useful and well-made instrument.

STITT.—The marks are, we think, due to something in the coating. They are visible by reflected light as little depressions. Probably they could easily be touched out.

MISS E. DILLON.—The negative is emothered with green fog, due to forcing in the developer. It also shows splashes of stain, as though some developer had been splashed on to it. The latter could be removed by soaking in water and using a chrome alum acid clearing solution. The green fog is not prejudicial in printing, but may be removed by soaking in:—

|                           |        |
|---------------------------|--------|
| Ferric chloride .. .. .   | 50 gr. |
| Potassium bromide .. .. . | 30 "   |
| Water .. .. .             | 4 oz.  |

Soak in this for a minute or two, or till the fog has disappeared, then re-develop with a weak ferric oxalate developer, and re-fix. We presume you do not want the negative back.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence. Every additional three words, one penny.

The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the **AMATEUR PHOTOGRAPHER**, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m. and other communications having reference to the Sale and Exchange column, must be addressed "Sale and Exchange, **AMATEUR PHOTOGRAPHER**, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the Editor, **AMATEUR PHOTOGRAPHER**, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

Cameras, Lenses, etc. — Lancaster's half-plate camera and double slide, fitted with 1892-Instanto-



graph lens and shutter, not used dozen times, cash 42s.—Sidney Allpress, Broughton, Huntingdon.

Lancaster's 1890 Instantograph with girder stand, condition equal to new, price 30s.; also a quarter-plate lens, 3s. 6d.—G. Smith, 12, Archway Road, Highgate, London.

First-class half-plate camera, six double backs, £5 10s.; Optimus rapid Euryscope lens, £4. Seen any time by appointment.—F. Holmes, French Embassy, Albert Gate, London.

**Dark Slides.**—Three Tylar's metal dark slides, with back and focussing screen, fit Lancaster's special quarter-plate camera, nearly new, 6s.—M. Bolney, Vicarage, Hayward's Heath.

**Hand-Cameras, etc.**—Stereoscopic Company's Dispatch hand-camera, six double backs, Newman's shutter, equal new, cost £12 15s., price £7.—B., 13, Canterbury Road, Brixton, S.W.

For sale, No. 5 Kodak folding camera, fitted with legs to work time exposures. To be seen by appointment with L. Ashburner, 9A, Gloucester Place, Portman Square.

Hand-camera, Lancaster Rover, holds 12 quarter-plates, cost 63s., will take 50s., new last season.—D., Hendry, 23, Sandgate Street, Ayr.

Optimus hand-camera, 5 by 4 rapid rectilinear lens, three double dark slides, cash or exchange; also bamboo tripod, suit bicyclist.—R. Craven, Flitcham, King's Lynn.

Facile hand-camera, quite new, leather covered, cost £6 10s. What offers?—Tenison Smith, Ryde.

Best mahogany quarter Optimus detective, carries 12 plates, excellent rapid rectilinear lens, splendid sharpness, two finders, shutter any speed, good condition, cost £6, £3 17s. 6d.—Write to C. P., Post Office, Vere Street.

McKellen's quarter-plate detective, with time exposure arrangement, carries 12 plates, case of stops, cost 4 guineas, will take £2 2s.—Leonard, School for Deaf, Oxford Street, Liverpool.

**Lenses, etc.**—Optimus 7 by 5 R.R. lens, almost new, 35s.—No. 300, office of this paper, 1, Creed Lane, E.C.

Excellent half-plate R.R. lens by London Stereoscopic Company, 37s. 6d.—L. R., Holmwood, Walton Park, Clevedon.

8 by 5 Optimus lens fitted with whole-plate Newman shutter, quite new, £3 3s.—352, King's Road, Chelsea.

Ross' 9 by 7 rapid symmetrical lens, iris diaphragms, perfect condition, cost £3 5s., price £6; Thornton-Pickard extra-rapid time and instantaneous shutter, 2½ in. hood, with speed indicator, new, fits above lens, cost 35s. 6d., price £1 5s.; Dallmeyer 8½ by 6½ rapid rectilinear lens, good condition, cost £7, price £5.—No. 303, office of this paper, 1, Creed Lane, E.C.

Dallmeyer 10 by 10 rapid rectilinear lens, splendid condition, £6 18s. lowest.—Flowerdew, Bridlesmith Gate, Nottingham.

Laverne's rapid rectilinear detective lens, works at fixed focus for all objects beyond twelve feet, cost 27s. 6d. What offers?—Meadway, Vestry Hall, Bethnal Green.

Lerebours' whole-plate lens, 24 in. focus, equal to new, bargain, 10s.; approval on deposit.—B., 29, Myrtle Road, Leicester.

**Rollholders.**—Eastman rollholder, 5 by 4, sale or exchange, practically new.—Tilt, 88, Stockwell Park Road, S.W.

Eastman rollholder, focussing screen, and unopened roll 24 exposures, half-plate, almost new, £2 10s.—J. C., 50, Clarinda Park, Kingstown.

**Shutters.**—Repeating shutter with pneumatic release for time and instantaneous exposures, always set, equal to new, cost 17s. 6d. What offers?—Meadway, Vestry Hall, Bethnal Green.

**Sets.**—Lancaster's quarter-plate 1891 Instantograph with lens, shutter, folding tripod, six double backs, and canvas bag, all without a scratch, together with hand-camera holding 12 quarter-plates, fitted with 5 by 4 R.R. lens, Taylor and Hobson's finder, and Thornton-Pickard's snap-shot shutter, the whole in perfect condition, price £5 10s. the lot, or will sell separate.—No. 301, office of this paper, 1, Creed Lane, E.C.

Rouch's 7½ by 5 camera, reversible back, two double slides, Dallmeyer's 8 by 5 rapid rectilinear lens, Phoenix shutter, solid leather case, three-fold ash stand, good as new, £11.—No. 302, office of this paper, 1, Creed Lane, E.C.

Lancaster's special brass-bound quarter Instantograph, rectigraph lens, pneumatic shutter, two brass-bound slides, Taylor's view-finder fitted focussing cloth, leather case, tripod and case, condition new, used once or twice, cost £5 10s., lowest £4 cash; bargain; deposit.—J. Shepherd Smith, St. John's House, Bedford.

6½ by 4½ camera, three double and one single backs, partition for stereoscopic work, pair of Optimus 5 by 4 R.R. lenses accurately paired, half-plate R.R. lens, folding tripod, £3 10s.—W. Wilkinson, Chidswell, Dewsbury.

Half-plate complete set, Sande and Hunter's exhibition camera, with two double backs, rapid doublet lens with diaphragms, tripod, leather case, shutter, etc., costing over £16. Cash offer only.—Geo. Heys Jones, 12, Addison Gardens, W.

Lancaster's quarter plate special brass-bound, Wray's 5 by 4 R.R. lens, iris diaphragm, Thornton-Pickard time and instantaneous shutter, guinea stand, six

double dark slides with case. What offers?—P. A. Ebert, 126, Liverpool Road, Islington.

Quarter-plate outfit, complete, by Watson, including best leather case, two lenses, and stand, as new, £5, bargain.—Walker Scotchholme, Nottingham.

Tourist's Premier camera by Watson, Holborn, No. 686, for half or two quarter-plates, three double dark slides, good tripod, best leather case, all equal to new, cost £9 7s. 6d., cash price 5 guineas.—Newland, Spencer Park, Wandsworth Common.

Giving up photography. Half-plate Instantograph, three dark slides, complete in sling case, quarter-plate Merveilleux self shutter, No. 2 Ross' portrait lens, and sandries, nearly new. Seen by appointment.—Cockburn, 28, Great Marylebone Street, W.

**Sundries.**—To be sold, price 4 guineas, cost 5, the Incandescent Gas Light Company's apparatus as applied to portraiture, enlarging, etc., or will exchange for good portrait lens.—No. 296, office of this paper, 1, Creed Lane, E.C.

I will exchange Ross' best £10 deer-stalking telescope for Dallmeyer 10 by 8 rapid rectilinear.—Apply. A. L., Birch Lodge, Lyndhurst.

## WANTED.

**Cameras, etc.**—Wanted, Lancaster's quarter-plate 1891 Instantograph, good condition, about 25s.—13, Russell Street, Reading.

**Hand-Cameras, etc.**—Wanted, hand-camera, perhaps preference to large Kodak.—Geo. Heys Jones, 12, Addison Gardens, W.

Wanted, good quarter-plate hand-camera, known maker, R.R. lens, or Kodak; will exchange £15 15s. artist autograph, real India proof (4 by 33) steel engraving of Dore's "Day Dream; or, Soldiers of Cross."—Oakleigh, Woodside Green, S.E.

**Lenses, etc.**—Wanted, Lancaster's combination rectigraph lens, and dark slides to fit quarter-plate Instantograph; state lowest price.—J. Russell, Belmont, Uddingston, N.B.

Wanted, lens by good maker, about 9 in. focus, iris diaphragm preferred, must not be longer than 2 in.—J. H. Godding, 6, Milton Villas, Newbury.

Lens wanted, whole-plate rectilinear, by Beck; must pass Kew examination.—M. Bolney, Vicarage, Hayward's Heath.

**Sets.**—Wanted, quarter-plate camera (Lancaster's Instantograph), tripod, and dark-slide; approval.—No. 299, office of this paper, 1, Creed Lane, E.C.

Wanted, whole or 10 by 8 outfit by best makers, good condition and low price.—John Southey, 43, King's Road, Southsea.

**Show Cases.**—Wanted, photographers' show cases with doors, any size, for outdoor use.—Walker, Grove Cottage, Heckmondwike.

**Shutter.**—Wanted, a shutter, aperture not less than 1½ in. diameter.—Tilt, 88, Stockwell Park Road, S.W.

**Sundries.**—Prize pictures: "A Tour in Norway," by Paul Lange, one copy wanted. Quote price to Chalmers, 26, The Gardens, East Dulwich, S.E.

**Photographic Appliances.**—Accessories and apparatus by all the following makers are always in stock; call and inspect any article you may wish to purchase, and compare with different makers' goods, and you will be able to possess the best and most suitable article for your purpose. Special large selections of Lancaster's goods, all Optimus cameras or lenses, Underwood's cameras, Fallowfield's Hand cameras, Talmer Hand cameras, Ideal Hand cameras, etc. All makers' plates, Ilford plates and papers, Paget plates, Thomas's plates, Fry's plates, Mawson's plates, silver papers, bags, cases, valises, 2-fold, 3-fold, and 4-fold stands, dishes, printing frames, etc., etc. Write for list to Manager, City Sale and Exchange, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium).

**Cameras! Cameras! Cameras! Lenses!** Lenses! Lenses! and photographic apparatus of every description.—We are agents for all the first-class makers and can supply any set upon the best possible terms, either for cash, by easy payments, or by exchange. Every description of apparatus taken as part payment for new. Cameras and sets lent on hire, by the day, week, or month. Lists free by post. Prompt attention, best discounts, approval by arrangement, and a guarantee given with every article to be genuine in every detail.—City Sale and Exchange Rooms, 54, Lime Street, Corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Cameras and Sets.**—Whole-plate Optimus Raymont set by Perken, Son, and Raymont, all the latest improvements, best leather bellows, double extension, reversing back, etc., fitted Optimus rapid rectilinear lens, by Optimus, one double slide Eastman's Roll Holder, folding stand, two cases, fitted Optimus Plunge shutter as new, set cost £18 18s., take £10 17s. 6d., lowest. Lancaster's whole-plate 1891 Instantograph, as new, all improvements, including camera, Instantograph lens, iris stops, instantaneous shutter, double slide, and folding stand, take £5 5s.; Dallmeyer stereoscopic camera, rack focussing, swing back, three double and one single slides, fitted Ross' actinic doublet lens, rotating stops, 5½ in. focus, £7 10s., a rare bargain; Stereoscopic Company's half-camera, finest mahogany, leather bellows, reversing, three double slides, Stereoscopic Company's rapid rectilinear lens, Waterhouse stops

and folding stand, £4 15s., as new; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s., worth £5; half-plate Instantograph, leather bellows, double extension, loose base-board Instantograph lens, two double slides and folding stand, best condition, take £2 17s. 6d.; Lancaster's stereoscopic camera, finest leather bellows, size 7½ by 4½, with extra bellows, two double slides, fitted silver ring rectigraph lenses, patent See-Saw shutter and folding stand, take £6 6s., quite new; Lancaster's stereoscopic Instantograph, as new, two double slides, 6½ by 3¼ Instantograph lenses, instantaneous shutter and folding stand, take £3 17s. 6d.; quarter-plate Le Meritoire set complete, camera, lens, slide and stand, 21s.; quarter-plate International complete, best order, camera, lens, two slides, lens shutter and stand, take 37s. 6d., lowest. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Hand Cameras.**—Adams's Ideal, covered leather, new few weeks since, very latest pattern, rapid rectilinear lens, carries twelve quarter-plates, two finders, etc., £517s. 6d.; Griffiths' a-plate magazine hand-camera, carries twelve plates, changing bag, good lens, finder, etc., 22s. 6d.; Samuel's patent stereoscopic hand-camera, rapid rectilinear lenses, changing bag, instantaneous shutter, for other quarters, cabinets, or stereoscopic, as new, 37s. 6d.; Samuel's quarter-plate hand-camera for twelve plates, quite new, rapid rectilinear lens, two finders, 32s. 6d.; Talmer Hand-camera, as new, fine lens, time and instantaneous shutter, two large finders, carries 12 plates, take £2 17s. 6d.; Optimus Magazine hand-camera, carries twenty-three quarter-plates; Optimus Euryscope lens, two finders, best condition, take £5 15s.; Houghton's Automatic hand-camera, 12 quarter-plates in case, rapid rectilinear lens, rotating stops two finders, as new, £4 10s. lowest; London Stereoscopic Company's despatch detective, covered black leather, fitted Stereoscopic Company's rapid rectilinear lens, Newman's shutter, two finders, three double slides, rack focussing, size quarter-plate, as new, take £6 6s., cost £10 10s.; King's hand-camera, thorough order, carries 12 ¼-plates, fine lens, two finders, take 25s. lowest; Griffiths' hand-camera, quarter-plate, three double slides, finder, good lens and shutter, take 17s., quite new; Sturtevant's Detective waistcoat camera, silver plated, six views on each plate, quite new, 20s. All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Bargains in Lenses.**—For sale, 15 by 12 Optimus wide-angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; 10 by 8 Optimus rapid rectilinear, Waterhouse stops movable, fine definition, covers well, £3 17s. 6d.; whole-plate rapid landscape lens by Tench (this is really same as Dallmeyer No. 3), rotating stops, grand definition, works 1/16, will cover 10 by 8, quite new, take 60s., cost more than double; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; half-plate rapid rectilinear, fine definition, by Cairry, Holborn, fitted iris stops, as new, £1 5s.; cabinet portrait lens, quite new, rack focussing, Waterhouse stops, take 25s., cost 60s.; Hockin's desideratum covers, rapid 7 by 5 rectilinear, iris stops, movable hood, grand article, quite new, take 37s. 6d.; half-plate Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; quarter-plate Ross' landscape lens, as new, a little better for all-round work, £1 7s. 6d.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Raymont, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

## ROYAL CORNWALL POLYTECHNIC SOCIETY.

THE SIXTIETH

## ANNUAL EXHIBITION

Will open at the

POLYTECHNIC HALL, FALMOUTH,

On TUESDAY, AUGUST 23rd, 1892,

When Medals and Prizes will be awarded in MECHANICS, FINE ARTS, PHOTOGRAPHY, NATURAL HISTORY, and other Departments. Special exhibitions of ELECTRICAL APPLIANCES.

Board of Trade Certificate granted protecting unpatented inventions.

Information respecting the PHOTOGRAPHIC DEPARTMENT may be obtained from Mr. W. BROOKS, Laurel Villa, Wray Park, Reigate, Surrey (member of the committee). Prize Lists, Entry Forms, and all information on application to the Secretary, EDWARD KITTO, The Observatory, Falmouth.



# The AMATEUR PHOTOGRAPHER

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No. 403. VOL. XV.]

FRIDAY, JUNE 24, 1892.

[PRICE TWOPENCE.]

## OUR VIEWS.

"To hold as 'twere the mirror up to nature."—*Shakespeare*.

The Editor is "At Home" on Monday Afternoons from 2 till 5 o'clock, and will gladly give advice upon all photographic matters; and on Thursday Mornings to Members of the Trade, etc., from 10 till 1 o'clock.

OUR VIEWS.—Optimus Competition—Mr. Popham and Ourselves—Projected Changes—Hazell's U.A.C. Sports.

LEADER.—Notes on Enlarging.

ARTICLES.—Elementary Photography (Hodges)—A Universal Hand-Camera (Bruno)—A Holiday in Norway—With a Camera in Spain (King)—Gelatino-Chloride of Silver Paper (Mummary)—A New Method of Photo-xylography.

LETTERS.—Prize Medal Excursions (Tansley).

APPARATUS.—The Imperial Dry Plates.

REVIEWS.—A Manual of Photography (Brothers).

SOCIETIES' MEETINGS.—Accrington—Barrow—Bedford and District—Burslem—East London—Herefordshire—Holborn—North Middlesex—P.S.G.B.—Rotherham.

QUERIES AND ANSWERS.

EDITORIAL DEPARTMENT.—All Literary Contributions, Queries and Answers, Photographs for Competition or Criticism, Books or apparatus for Notice or Review are to be addressed to the EDITOR, AMATEUR PHOTOGRAPHER, 1, CREED LANE, LUDGATE HILL, LONDON, E.C. (All communications should reach the Editor on Tuesday.)

### TERMS OF SUBSCRIPTION—

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TRADE ADVERTISEMENTS are received up to Tuesday morning.

PUBLISHING DEPARTMENT.—All letters containing Subscriptions, Orders, Remittances, SALE AND EXCHANGE Advertisements, or other business matters for the AMATEUR PHOTOGRAPHER are to be addressed to the Publishers, HAZELL, WATSON, AND VINEY, LD., 1, CREED LANE, LUDGATE HILL, LONDON, E.C. SALE AND EXCHANGE Advertisements (at the charge of Three Words for One Penny) must be received by Tuesday evening's post to ensure insertion in the same week's issue.

"Amateur Photographer" Monthly Competition No. 37.—"PORTRAITURE AND FIGURE STUDY." Latest day, June 27th. —Prizes: Silver and Bronze Medal, with ribbon and clasp. One mounted print only to be sent in. Entry forms, etc., on receipt of stamped envelope. Address: Editor, AMATEUR PHOTOGRAPHER, 1, Creed Lane, E.C. (Prizes will be announced and photographs reproduced and criticised in AMATEUR PHOTOGRAPHER Supplement, July 15th.)

WITH regard to the "Optimus" Competition, we have had several queries as to the number of prints to be sent in. A competitor may enter in every class if he likes, but can only send in one print to each class.

WE have received the following letter from Mr. E. N. Popham, of South Shields, anent our remarks on his print sent in to our last competition:—

"In your illustrated supplement which is issued with to-day's AMATEUR PHOTOGRAPHER, you make a disgraceful imputation against me, namely, in attempting to take you in, or in other words, to gain your prize by a dishonest action.

"Now, sir, I emphatically beg to state that the print I sent in was a faithful representation of the sunrise on March 29th, at 6 a.m., not midnight, as you state.

"In my opinion, and in the opinion of others whose advice I have taken, your imputation reflects great dishonesty upon me, and I demand that you shall withdraw your statement and make me an apology, as public as you have made your imputation."

WE have one or two points to draw the attention of our correspondent to. First, we did not intend to impute dishonesty to him; secondly, he is requested to read the words of his letter which we have printed above in italics, and then to consider for a moment whether the words are true. We say emphatically *they are not*—that the print sent in to our competition represented midnight, and not sunrise; there is just a little light in the centre of the clouds, and the reflection along the sea, but all the rest of the print is as black, if not blacker than midnight.

IF it was intended to be sunrise, and "a faithful representation of the sunrise," then we alter our criticism and say, "that the print is an utter failure as a picture of sunrise, and represents midnight." We did not see the sun rise at South Shields on March 29th, but having seen a good many sunrises, we can honestly state that we never saw one so black as the print sent in. But if our competitor can produce undoubted testimony that there was absolutely no light on that date till the sun shone through the break in the clouds, we will willingly admit we were wrong.

So far as regards our suggesting our correspondent trying to gain the prize by dishonesty, it may be some satisfaction to him to know that the print was thrown out by the two judges in our presence in the first round, and never stood a chance at all.

As this number is the last of this volume, we shall introduce with the new volume a slight change with regard



to one portion of our paper—the “Queries and Answers” column. All queries will, unless answered by our readers, be answered by us the second week after publication. This will prevent, we think, considerable disappointment. We shall also exclude all queries relating directly to commercial goods. For instance, such as, “Will any reader tell me which is the better lens—Black’s or Brown’s?” Such questions as this are obviously unfair, and lead to a great deal of unpleasantness, which we wish to avoid. This will not in any way prevent questions being asked as to failures in using certain papers, etc., and we shall be glad at all times to answer any questions ourselves.

Another change we have already noted with regard to the “Illustrated Supplement” and “Monthly Competitions.” The prints will be divided into four classes, only the first and second being criticised. In the first class the prints will be numbered in the order of merit. The supplement will be printed on a stout paper, so that we shall hope to get finer results from the blocks, and the details as to the prints will be considerably cut down, so as to allow of the inclusion of a brief article on the prevailing fault in the prints entered.

Past prize winners are now debarred from competing in a Monthly Competition for a prize of the same value as already won, but we shall be glad to receive prints from them, and would award them, if deserving, with an extra silver or bronze bar to fit on existing ribbons. This we trust will meet the grumble which some prize winners now greet us with.

ON Saturday, July 2nd, the members of Hazell’s United Athletic Club (the *employés* of our publishers) will hold their annual sports at Richmond, and it has occurred to us that it would be a very good opportunity for any of our readers to obtain instantaneous shots of the finish of the races, etc. Bicycle-races, foot-races, jumping, and the usual events will take place. We have made arrangements for a portion of the inner enclosure to be railed off specially for us, and we shall be pleased to admit any of our readers to the same on application to us for tickets, price 6d. each. If sufficient applications are received we shall take down a commodious dark-tent, so that plates may be changed on the field. The grounds are very extensive, and there will be no crowding. The sports commence at 3 p.m.

**The Phonoscope.**—Some time ago it was announced that M. Dumeny had succeeded in taking instantaneous photographs of the lips of a speaker, and in recombining them in a kind of zoetrope, so as to reproduce the original movements and enable a deaf-mute to understand what was said. He has recently improved on the process and invented a new apparatus for combining the images, which he terms a phonoscope. The changes of the lips in speaking are so rapid that fifteen photographs a second are required to give a good result. Moreover, several sets of images for the same phase are taken so that nothing essential should be omitted. The whole head and bust of the speaker is photographed so as to get the benefit of the expression. In the phonoscope the positives are arranged around the periphery of a disc, which is rapidly turned by a handle. A second disc having a single window in it just opposite the plates is also rotated by the same handle but at a much higher speed than the other. A beam of sunlight illuminates the plates from behind, and the observer looking into the apparatus sees them pass his eyes one after another in such rapid succession as to produce the effect of a single image endowed with animation. To this end at least ten or twelve must pass the retina in a second. M. Dumeny is so far satisfied with his results that he looks forward to a time when we shall possess veritable “speaking likenesses” of our friends. In short, the family album will be a kind of phonoscope and contain photographs which will not only smile, but speak, or appear to speak to us, as though they were alive.

## NOTES ON ENLARGING.—XV.

It seems almost unnecessary to give any preambulatory notes as to the cause for the desire for warm tones on bromide paper. The Eastman Company first suggested, we believe, the application of uranium to the finished print on their transferotype paper, to give a warmth and colour which could not be obtained by ordinary development, but they pointed out that it was essentially a process of intensification; and one cannot help feeling very strongly that it is so, and it has a tendency to strengthen up the distance so as to destroy to some extent the atmospheric effect.

In Anthony’s *International Annual*, 1889, page 266, Mr. Wall stated that experiments had been commenced which would enable any one to obtain warm tones even to purple shades on bromide prints; and in the succeeding volume, 1890, page 340, he suggested bleaching the image with a chlorising agent and then reducing with sulphantimonite of soda or a weak developer.

Senior recommended the chlorising of the image and redevelopment, and A. R. Dresser suggested bleaching with mercury and redevelopment with quinol.

In his excellent book, “Leitfaden für den Positiv-Entwicklungs-process auf Gelatine-Emulsions Paper, etc.,” Dr. E. A. Just suggests the use of the alkaline developers for obtaining warm tones; and Dr. Stolze (“*Photo-Nachrichten*,” 1891, page 4) gives a summary of his experiments to obtain warm tones by various developers, and finally suggests giving a long exposure, and developing with the following:—

| A.               |    |    |    |           |
|------------------|----|----|----|-----------|
| Sodium sulphite  | .. | .. | .. | 20 parts. |
| Eikonogen        | .. | .. | .. | 4 ”       |
| Water            | .. | .. | .. | 300 ”     |
| B.               |    |    |    |           |
| Potash carbonate | .. | .. | .. | 50 parts. |
| Water            | .. | .. | .. | 300 ”     |

To obtain brownish tones, the actual developer must be compounded as follows:—

|            |    |    |    |           |
|------------|----|----|----|-----------|
| Solution A | .. | .. | .. | 50 parts. |
| ” B        | .. | .. | .. | 20 ”      |
| Water      | .. | .. | .. | 150-180 ” |

To every 100 parts of this add—

Solution of bromide of potash (1 : 10) 5 to 10 parts.

Brown or blackish brown tones only are to be thus obtained. Dr. Stolze also suggests bleaching the image with a solution of bromide of copper, stating that this is preferable to chlorising the image, as stains are less likely to appear. The bromide of copper solution can be made by dissolving:—

| A.                |    |    |    |            |
|-------------------|----|----|----|------------|
| Copper sulphate   | .. | .. | .. | 1 part     |
| Distilled water   | .. | .. | .. | 100 parts  |
| B.                |    |    |    |            |
| Potassium bromide | .. | .. | .. | 1 part     |
| Distilled water   | .. | .. | .. | 100 parts, |

and mixing the two solutions; the thus bromised image should be well washed and then exposed to daylight and redeveloped with the above eikonogen developer mixed in the following proportions:—

|            |    |    |    |           |
|------------|----|----|----|-----------|
| Solution A | .. | .. | .. | 50 parts. |
| ” B        | .. | .. | .. | 20 ”      |
| Water      | .. | .. | .. | 5,000 ”   |



The second reduction takes place very slowly, and the image becomes first red, then reddish brown, black red, and finally violet black. When any desired tone is attained, the print should be immersed in a solution of citric or tartaric acid or a solution of sulphite of soda acidulated with one of the above acids. Fixing is not necessary, and the image is said to be permanent.

Werge ("Year-Book of Photography," 1891, page 86) suggests the use of a weak quinol developer with about five times the ordinary exposure, when reddish or warm brown tones are obtained. Clement J. Leaper suggests the use of a chlorising agent and redevelopment under an acidified ferrous sulphate solution in daylight. It is, of course, possible to obtain modifications of tone by using chloroplatinic acid, or a strong sulphocyanide gold bath made alkaline with caustic potash, or by the use of a mixture of iodide of potassium and chloride of gold, as suggested by H. H. Roden. To these methods we shall not do more than refer, merely remarking that so far we have obtained the best results by using the sulphocyanide alkaline gold bath after fixing and well washing.

To Mr. J. Weir Brown we are certainly indebted for directing so much attention to the use of uranium ferridcyanide, and his experiments have tended most decidedly to the improvement of bromide prints and enlargements so far as regards warmth of tone. Mr. Weir Brown's developer is compounded as follows:—

## SOLUTION A.

|                           |         |
|---------------------------|---------|
| Quinol .. .. .            | 720 gr. |
| Potassium bromide .. .. . | 135 "   |
| Sodium sulphite .. .. .   | 9 oz.   |
| Water to .. .. .          | 90 "    |

## SOLUTION B.

|                             |         |
|-----------------------------|---------|
| Sodium carbonate .. .. .    | 13½ oz. |
| Potassium carbonate .. .. . | 13½ "   |
| Water to .. .. .            | 90 "    |

For use mix in equal parts and add from 1 to 1½ oz. of water. After development, fixing, and washing, the following toning bath is used:—

|                                 |        |
|---------------------------------|--------|
| Uranium nitrate .. .. .         | 20 gr. |
| Potassium ferridcyanide .. .. . | 20 "   |
| Distilled water to .. .. .      | 20 oz. |
| Acetic acid .. .. .             | 1 "    |

When toned the prints should be well washed, and preferably in slightly acidified water, as alkalis dissolve uranium tone. It is questionable whether these prints are permanent: some at least contend that they are not, but Mr. Weir Brown contends that they are, or at any rate for some considerable time. It may be interesting to note with regard to this subject that we have some transferotype prints thus treated in 1889 which although hung in an ordinary room show no change at present.

Starting with the presumption that it is desirable to obtain various toned prints by the aid of bromide paper—although it has been contended, and justly so, we think, that there are other papers more suitable for this purpose—we propose now to suggest some chemical experiments which may give us still further command over this process of toning, if toning it can be called, though actually it is an intensification process.

The bromide print may be developed with ferrous oxalate, quinol or eikonogen, but in no case must full vigour be obtained; in fact, the finest results are to be obtained by over-exposure and thin images obtained with eikonogen; after fixing and well washing immerse the print in the well-known lead intensifier of Eder and Toth, which is composed of—

|                                    |          |
|------------------------------------|----------|
| Nitrate of lead .. .. .            | 4 parts. |
| Ferridcyanide of potassium .. .. . | 6        |
| Distilled water .. .. .            | 100      |

Filter.

The image becomes white from formation of the ferrocyanides of silver and lead, and this enables us to obtain almost any colour we like; and for convenience we now tabulate the tones and the necessary solutions.

Black, by using—

|                                |          |
|--------------------------------|----------|
| Ammonium sulph-hydrate .. .. . | 1 part.  |
| Distilled water .. .. .        | 3 parts. |

Brown, by using—

|                         |           |
|-------------------------|-----------|
| Schlippe's salt .. .. . | 10 parts. |
| Ammonia .. .. .         | 5 "       |
| Water .. .. .           | 150 "     |

Reddish yellow, by using—

|                              |           |
|------------------------------|-----------|
| Potassium bichromate .. .. . | 1 part.   |
| Ammonia .. .. .              | 1 "       |
| Water .. .. .                | 10 parts. |

Yellow, by using—

|                                    |           |
|------------------------------------|-----------|
| Neutral chromate of potash .. .. . | 1 part.   |
| Water .. .. .                      | 10 parts. |

Green, by treating the yellow image with—

|                         |           |
|-------------------------|-----------|
| Ferric chloride .. .. . | 1 part.   |
| Water .. .. .           | 10 parts. |

Brown, by treating the yellow image with—

|                             |           |
|-----------------------------|-----------|
| Manganate of potash .. .. . | 1 part.   |
| Water .. .. .               | 10 parts. |

Copper red (Bartolozzi?), by treating the yellow image with—

|                         |           |
|-------------------------|-----------|
| Cupric chloride .. .. . | 1 part.   |
| Water .. .. .           | 10 parts. |

Red brown, by treating the image with—

|                            |           |
|----------------------------|-----------|
| Nitrate of uranium .. .. . | 1 part.   |
| Ammonium chloride .. .. .  | 1 "       |
| Water .. .. .              | 10 parts. |

Deep yellow, by treating the yellow image, with—

|                             |           |
|-----------------------------|-----------|
| Iodide of potassium .. .. . | 1 part.   |
| Water .. .. .               | 10 parts. |

Reddish brown, by treating the white image with—

|                         |           |
|-------------------------|-----------|
| Copper sulphate .. .. . | 1 part.   |
| Water .. .. .           | 10 parts. |

Green or reddish grey, by treating the white image with—

|                                     |           |
|-------------------------------------|-----------|
| Cobalt chloride or sulphate .. .. . | 1 part.   |
| Water .. .. .                       | 10 parts. |

This image is first greenish and then gradually turns reddish grey.

Green, by treating the white image with—

|                                     |           |
|-------------------------------------|-----------|
| Nickel chloride or sulphate .. .. . | 1 part.   |
| Water .. .. .                       | 10 parts. |

Orange yellow, by treating the white image with—

|                           |           |
|---------------------------|-----------|
| Mercuric chloride .. .. . | 30 parts. |
| Potassium iodide .. .. .  | 45 "      |
| Water .. .. .             | 100 "     |

It is certainly not necessary for us to indicate the chemical decompositions which occur, but we may point out that the image in each case is formed by simple well-known laws of chemical decomposition, and one can at once determine the probable permanence or not of the tone obtained.



## Letters to the Editor.

### PRIZE MEDAL EXCURSIONS.

SIR,—In thinking over Mr. Hector Maclean's proposition that you should offer a set of medals for prints taken at Club outings, may I be permitted to differ from him, as I think that such prizes should be offered and obtained only from his own Club.

If all clubs would do as the Liverpool Camera Club is doing, viz., have two Saturday and one Thursday afternoon excursions, in each month during the summer, besides all Bank Holidays, and have prizes for lantern slides and prints from negatives taken during such outings, I feel sure this would be the necessary stimulant.

The outings create a good fellowship and tend to increase the strength of the club, in fact our evening meetings during the summer have been better attended than the winter meetings.—Yours, etc.,

W. TANSLEY (Hon. Sec.)

Liverpool Camera Club.

## Apparatus.

### THE IMPERIAL DRY PLATES.

We have given these plates an extended trial, and they have given us every satisfaction. They are particularly clean working, and give very soft, delicate negatives, of good gradation, and are characterised by the rapidity with which they develop and fix. The special formula recommended for these plates is the following plain pyro and ammonia:—

#### STOCK SOLUTION.

|                      |    |    |    |               |
|----------------------|----|----|----|---------------|
| Pyrogallie acid      | .. | .. | .. | 1 oz. avoird. |
| Ammonium bromide     | .. | .. | .. | 1 "           |
| Water, to make       | .. | .. | .. | 10 fluid oz.  |
| Nitric acid (strong) | .. | .. | .. | 25 drops      |

#### No. 1.

|                      |    |    |    |          |
|----------------------|----|----|----|----------|
| Liquid ammonia, '890 | .. | .. | .. | 2½ drms. |
| Water                | .. | .. | .. | 20 oz.   |

#### No. 2.

|                |    |    |    |        |
|----------------|----|----|----|--------|
| Stock solution | .. | .. | .. | 1½ oz. |
| Water          | .. | .. | .. | 18½ "  |

For development, mix equal parts of 1 and 2 just before using.

#### HYDROQUINONE DEVELOPER.

#### No. 1.

|                   |    |    |    |               |
|-------------------|----|----|----|---------------|
| Hydroquinone      | .. | .. | .. | 150 gr.       |
| Potassium bromide | .. | .. | .. | 25 "          |
| Soda sulphite     | .. | .. | .. | 2 oz. avoird. |
| Water             | .. | .. | .. | 20 "          |

#### No. 2.

|              |    |    |    |         |
|--------------|----|----|----|---------|
| Caustic soda | .. | .. | .. | 100 gr. |
| Water        | .. | .. | .. | 20 oz.  |

For development use equal portions of each.

We have tried these, eikonogen, Rodinal, and an ordinary pyro-soda developer, and find that the plates give good results with all.

The plates are issued in three degrees of rapidity—ordinary, extra rapid, and extreme rapidity—and from camera tests against other standard plates, we find them quite equal in rapidity to the most rapid plates in the market. Although we do not agree with the sensitometer numbers, we have found them to be 19–21 and 25 degs. respectively.

We can recommend these plates to our readers, as they have proved themselves in our hands free from halation and giving good latitude in exposure. The prices are those known as "popular," that is—

|                  | Quarter-plate. |     | Half-plate. |     | Whole-plate. |     |
|------------------|----------------|-----|-------------|-----|--------------|-----|
|                  | s.             | d.  | s.          | d.  | s.           | d.  |
| Ordinary         | ..             | 1 0 | ..          | 2 3 | ..           | 4 3 |
| Extra rapid      | ..             | 1 3 | ..          | 3 0 | ..           | 5 6 |
| Extreme rapidity | ..             | 1 6 | ..          | 3 8 | ..           | 6 6 |

**Woolwich.**—The ordinary meeting was held on the 15th inst. It was decided that a limited number of ladies or gentlemen be admitted as honorary members of this section on payment of an annual subscription of 5s. Mr. Morgan, of The Fry Manufacturing Co., described the various manufactures of W. Griffiths, Birmingham. The next meeting is fixed for Wednesday, June 29th, when a paper will be read by the President, Mr. A. R. Dresser, on "Hand-cameras."

## Reviews.

*A Manual of Photography.* By A. Brothers, F.R.A.S. Published by Chas. Griffin and Company, Ltd., Exeter Street, Strand. Price 18s.

We have here certainly the finest illustrated handbook to photography which has ever been published. We have three photogravures, four collotypes, one chromo-collotype, numerous blocks, photo-chromotypograph, chromolithograph, woodbury-type and woodburygravure prints.

The literary matter is divided into five parts. The first part, being "Introductory," treats of the history, chemistry, optics, and light in photography; the second part is devoted to "Processes," arranged in an alphabetical order; part three includes "Apparatus;" part four "Materials used in Photography;" part five, "Applications of Photography" and "Practical Hints."

Special attention has been paid by the author to out-of-date and bygone processes, and for these alone the work would form a valuable reference book to any worker, but as in addition the newer processes claim their fair share of notice, the work becomes doubly useful. Although in style the book here and there recalls previous works, Mr. Brothers has evidently given us the benefit of an extended experience of many years as an expert hand.

The book is printed and turned out in first-class style, and does credit to the printers and publishers. It is a work which should be on the reference shelves of every photographic society.

## Catalogues.

C. C. VEVERS, 12, Market Street, Briggate, Leeds. "1892. Summer Supplement."

A sixteen page pamphlet containing all the latest novelties introduced by Mr. Vever's for the present season.

ADAMS AND Co.'s "Photographic Annual, 1892–93," 81, Aldersgate Street, and 26, Charing Cross Road. Price 6d.

Each year sees this grow bigger and bigger; and we have now a comprehensive and copiously illustrated book of 384 pages. Besides the usual photographic requisites, this annual contains all the novelties introduced or sold by the publishers, and over 120 pages of literary matter by such well-known men as Abney, Davison, Pringle, Robinson, Chapman Jones, etc. It will form a useful addition to any worker's reference library.

**The Royal Society's Soiree.**—The second soiree, or "ladies night," was held on the 15th inst. in the Society's Rooms in Burlington House, the company being received by the President, Lord Kelvin, and Lady Kelvin, supported by Lord Rayleigh, Professor Michael Foster, and Sir John Evans, members of Council. Professor Lockyer had some very interesting astronomical photographs, which he displayed in magnified form on the screen—amongst the most recent acquisitions being photographs of the moon and of the planet Jupiter taken at the Lick Observatory, of the recent eclipse of the moon, of the vast sun spots of February last, and some, of wonderful clearness and exquisite definition, of a portion of the great nebula in Orion, and of the Star cluster 5 M, taken by Dr. Common's new five-foot reflector telescope at Ealing.

**Fairfield.**—The ordinary monthly meeting was held on the 14th inst., the chair being taken by the Vice-president, Mr. H. J. Mallabar. The award for the competition of the Gresford excursion was read and the prints exhibited, the first prize being gained by C. A. Timmins, 2nd H. Holt, 3rd J. H. Welch. The evening being devoted to an exhibition of photographic novelties, Messrs. Archer and Son showed some hand-cameras, the King camera, a plate-drying apparatus, etc.; H. Haig, a small metal hand-camera, cheap drop and rebounding shutters, etc.; F. A. V. Lloyd, the new Kodaks, Eclipse changing bags, and Percy Lund's goods; Messrs. Sharp and Hitchmough, a hand-camera, new dishes, travelling lamp, and the Aptus specialties; Messrs. Wood Bros., a Compactum camera stand, etc.; and several other novelties were also shown by members, and a most enjoyable and instructive evening spent.

**Richmond.**—Since the beginning of the summer session, weekly meetings, chiefly of an informal character, have been held and, considering out-door attractions, well attended. On the 10th inst. Mr. Ardaseer gave a demonstration of the process of toning with salts of platinum. The process was clearly and concisely explained, and a number of prints were toned by way of example. Club excursions have been made to Perivale, to Hayes and Keston, and to Penhurst.



## Elementary Photography.

BY JOHN A. HODGES.

### CHAPTER XXI.

#### COPYING.

The Advantages of Photography as a Means of Reproduction—Three Essentials—Lighting—The Plate—The Development—How to Make a Copying Apparatus—The Lens—Focussing—Copying Same Size—Enlarging—Reducing—Lighting—The Use of a Reflector—Copying by Artificial Light—Exposure—The Plate—Quick Plates—Photo-Mechanical Plates—Hydroquinone Development Recommended—Copying Silver Prints—Unmounted Prints—Copying Coloured Prints—Paintings, etc.

Of the many applications to which photography may be put, perhaps there is not one more useful than copying. So far as the mere reproduction of detail goes, photography excels in accuracy the work of the most skilful draughtsman. For copying old and valuable engravings, woodcuts, and line drawings, for the reproduction of diagrams, maps, and plans, its aid is invaluable. But probably the first work of this kind which the beginner will attempt will be the copying of a photograph, for although many people will not submit themselves to the tender mercies of the amateur portraitist, yet they do not mind handing over their "counterfeit presentment" to him in order to get it copied. It is by no means a difficult matter to copy a photograph, but it is not so easy to make people understand that the copy, in most cases, will probably be somewhat inferior to the original. However, this is not always so, for if the original happen to be an old and faded silver print, a very great improvement may sometimes be effected in the copy.

The essential matters to be attended to may first be roughly enumerated, each one in turn being subsequently considered in detail. First, and of chief importance, the lighting of the subject to be copied; secondly, the employment of a suitable plate; thirdly, a special system of development.

The picture or photograph which is to be copied may be simply secured to a wall, or to a drawing-board, with drawing pins, but the work will be very much facilitated, especially if any great amount of it is in contemplation, if a special copying apparatus be devised. Such an arrangement as that which I am about to describe may be easily constructed and at very little cost. Its size will of course depend upon the nature of the work which is to be undertaken, but the dimensions given will enable originals up to 2 ft. square to be copied up to the half-plate or any less size. A piece of nicely-planed board one inch thick, 4 ft. 6 in. long by 11 in. broad, should be procured, to form a base-board. To one end of this a drawing board should be securely screwed with two iron angle brackets at right angles. To this the print or photograph is to be attached with drawing pins. Sometimes, however, the print or picture to be copied is bound up in a volume. In such a case the book may be secured to the drawing-board by means of two strips of wood and four screw clamps. We must now devise some means of fixing the camera, so that when in position the lens will point to the centre of the drawing-board. Procure a piece of half-inch board the exact width of the base of camera and 12 in. long, bore a hole in the centre to admit of the camera screw, now attach two other pieces as side supports, allowing about  $\frac{1}{4}$  in. to project on each side so as to keep the base of the camera perfectly square. Now screw down to the baseboard two long strips of wood, just far enough apart to allow

the camera support to slide stiffly between them. The diagram to be copied having been pinned up, the camera is screwed to the support and the focus roughly ascertained by sliding the arrangement backwards and forwards, the fine adjustment being effected with the rack and pinion.

The best lens to use for copying is the rapid rectilinear, although a wide-angle rectilinear is sometimes more convenient, as it enables the camera to be placed nearer to the object to be copied. It is very necessary to focus accurately. This should be done with the full opening of the lens, after which a small stop should be inserted in order to get the sharpest possible definition to the margin of the plate;  $f/32$  I usually find sufficient for the purpose. If the copy is to be the same size as the original, the camera must be racked out to twice the focal length of the lens used, the lens being placed at the same distance from the object to be copied. If a larger sized reproduction is required, the lens must be nearer to the original, or, if reduction be required, the distance between the two should be increased.

Either daylight or artificial light may be employed. If the former is preferred, the apparatus should be placed on a firm table in front of and at right angles to a window, if possible, facing north. This will give a strong side-light, and would, when copying engravings or photographs give a very bad effect, the mode of light exaggerating the grain of the paper. To remedy this, a small bed-room mirror should be placed on the shadow-side of the picture, and so adjusted as to throw as much reflected light as possible on the picture to be copied. A picture on even rough paper should not show any marked granularity when lighted in this way. The same system is employed when copying by lamp or gaslight. The illuminants in this case, whether gaslights or oil-lamps, are placed on both sides of the apparatus, and in such a position that neither source of light is included in the field of the lens, and it is well, in any case, to place a cardboard or other screen between the source of light and the lens. The proper amount of exposure can only be learnt by experience, though after very little practice, the conditions being much more uniform than when photographing in the field, it will be comparatively easy matter to determine it correctly.

The excellence of the result will depend to some extent upon the plate which is used. Now, an extra rapid plate is the worst possible for this class of work, and the slowest obtainable should be chosen. There are plates specially made for the purpose, called photo-mechanical plates. Some of these should be obtained, as good results will be more easily obtainable upon them than upon ordinary plates. They are very slow, probably not half so rapid as ordinary plates. In copying line engravings the great point to aim at is to secure sufficient density in the opaque portions of the negative, at the same time keeping the lines clear and free from fog. In other words, we want great opacity combined with extreme clearness. These qualities will not be easily obtainable with quick plates, but will not be difficult to secure on the specially-prepared plates to which I have referred. An exposure as nearly accurate as possible having been given, it becomes, of course, necessary to develop the plate. Now, undoubtedly, the best developer to employ for this particular work is hydroquinone, and its tendency, when used for ordinary negative work, to give extreme density and contrast becomes, for this special purpose, an advantage rather than a defect. Equal portions of the stock solutions, directions for preparing which were given in the chapter on the preparation of the solutions, should be poured into a clean developing cup, and half its bulk of water added. This should then be applied to the plate. If the exposure has been approximately correct, the image will appear slowly and regularly, and development



must be continued until a dense and vigorous negative is obtained. If the plate has been properly exposed, the clear portions of the negatives should remain unclouded and free from veil or fog, until the last. If, however, they begin to veil before sufficient density is obtained, the exposure has been excessive, and the plate must be removed from the developer, washed, fixed, and, if a second plate cannot be exposed, which is by far the best plan, the over-exposed one should be intensified, but with the photo-mechanical plates it should not be necessary to resort to intensification if the exposure has been correct.

In copying silver prints it is better, when possible, to have them enamelled, as there will be less granularity in the copy. Care, however, must be taken to avoid reflected light from the glazed surface; this can be easily managed by adjusting the mirror or reflector. Unmounted prints are best soaked in clean water, and carefully squeezed to a sheet of glass; not, of course, face downwards, as to photograph through the glass would probably give distortion, and reflections would be difficult to avoid. This mode of treatment takes out all creases, and does not injure the photograph. Bromides and platinotypes may, if desirable, be treated in the same way.

When coloured pictures, water-colours, oil paintings, or chromo-lithographs have to be copied, the use of isochromatic plates becomes indispensable, but as their employment confers such great advantages, I propose to devote the next chapter to a description of their special properties and use.

## A New Method of Photo-xylography.

PROFESSOR A. LAINER contributes a useful paper to the current number of *Photographische Correspondenz*, on the preparation of wood blocks for engraving by the aid of photography, and for this purpose prepares four solutions.

|          |     |     |     |     |                 |
|----------|-----|-----|-----|-----|-----------------|
| 1.       |     |     |     |     |                 |
| Gelatine | ... | ... | ... | ... | 1 part.         |
| Water    | ... | ... | ... | ... | 30 to 50 parts. |

|                   |     |     |     |     |           |
|-------------------|-----|-----|-----|-----|-----------|
| 2.                |     |     |     |     |           |
| Ammonium chloride | ... | ... | ... | ... | 10 parts. |
| Water             | ... | ... | ... | ... | 100 "     |

|                |     |     |     |     |           |
|----------------|-----|-----|-----|-----|-----------|
| 3.             |     |     |     |     |           |
| Silver nitrate | ... | ... | ... | ... | 10 parts. |
| Water          | ... | ... | ... | ... | 50 "      |

|             |     |     |     |     |           |
|-------------|-----|-----|-----|-----|-----------|
| 4.          |     |     |     |     |           |
| Citric acid | ... | ... | ... | ... | 30 parts. |
| Water       | ... | ... | ... | ... | 60 "      |

These solutions are mixed in the following proportions:—

|                |     |     |     |     |          |
|----------------|-----|-----|-----|-----|----------|
| Solution No. 1 | ... | ... | ... | ... | 5 parts. |
| " 2            | ... | ... | ... | ... | 1 part.  |
| Zinc white     | ... | ... | ... | ... | 5 "      |
| Solution No. 3 | ... | ... | ... | ... | 8 parts. |
| " 4            | ... | ... | ... | ... | 3 "      |

The ingredients must be mixed in the above order, in a mortar, and solution 3 gradually added; when the mixing is complete, 1 part of hot water is added, with constant stirring.

The paste thus obtained is spread on the block with a soft flat brush, in parallel lines, and then this is repeated across the former direction, and the marks evened out with a soft camel's hair brush. The block thus treated will dry in a very short time, and the printing is effected under a reversed negative in about 15 to 60 minutes in diffused light. The block is well washed with water, and treated with concentrated solution of hypo or the combined toning and fixing bath may be used. After washing it is treated with a strong solution of chrome alum, then washed and dried. The delicate film thus obtained can be protected by a thin benzol solution of india-rubber, which prevents it from chipping.

## A Universal Hand-Camera.

BY MAJOR BRUNO.

### CHAPTER IV.

In fig. 8 the front, or door of the box, is shown in detail.

It has already been explained that this door is not hinged to the side of the case itself, but to a flap or wing (D), which runs in grooves fitted to the inside of the box, thus permitting the front to be drawn out, and the shutter to be used with the long-focus lens. The front, E, should either be "framed up" of  $\frac{1}{4}$  in. stuff, or be made of two pieces,  $\frac{1}{8}$  in. thick, glued and screwed together in opposite directions of the grain, in order that warping may be conspicuous by its absence.

To frame up the front, two pieces,  $1\frac{1}{4}$  in. by  $5\frac{1}{2}$  in., and one piece, 4 in. by  $5\frac{1}{2}$  in., will be required. A groove should be run on one edge of the former and on both sides of the latter, preferably by means of a fine circular saw, and when gluing up these three "components" of the front to make one whole, a slip or feather of thin wood is glued into the grooves, thus connecting with additional strength the centre to the side pieces. The alternative method of forming the front by means of two pieces glued together

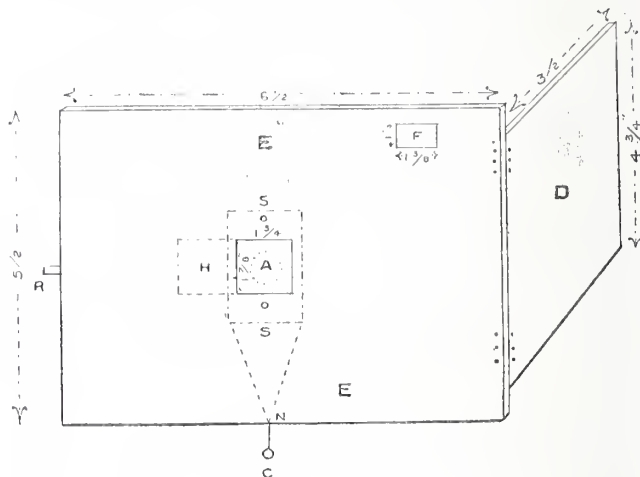


FIG. 8

in opposite directions of the grain will give no difficulty, and is the plan recommended for novices in wood working.

Having now got out the front to the dimensions shown in fig. 8, cut out with the fretsaw, or chisel, the lens aperture A,  $1\frac{3}{8}$  in. by  $1\frac{1}{4}$  in., and slightly bevel the edges to the front. In the writer's camera a small sliding-door, as shown by the dotted lines at H, is fitted to work between the lens aperture and the front of the shutter, and a similar covering is fitted to the finder aperture F. These doors are not absolutely necessary, and can be omitted, but they protect the lenses of the camera and finder from dust or accidental injury. If the amateur decides to fit them, and is making the front of two  $\frac{1}{8}$  in. pieces, he will find it a very simple matter to make these small doors of pieces cut out from the inner thickness of the front, and screwing strips of thin metal against which they can slide; a small round-head screw, fixed so as to admit of their being opened and closed from the outside, completes them. Proceed to cut out the finder aperture F,  $1\frac{3}{8}$  in. by 1 in., also bevelling the edges.

To understand the interior arrangement of the front, fig. 3\* (p. 418) should be referred to. The shutter, shown

\* The illustration on page 419 should have been described as fig. 3, and fig 3 (page 418) as fig 4.



by the dotted lines S, fig. 8, is firmly screwed to the inside of the front by means of brass round-head screws put in from the outside, care, of course, being taken that they are only long enough to enter the front of the shutter far enough to secure it, and no more, or the mechanism of the latter may be injured. The setting cord is carried down as at C, fig. 8, and through a small eyelet or staple at N. The release can be effected by a cord with a button carried to R, or, better, by the lever shown in fig. 3 (p. 418). This is merely a piece of thin sheet brass cut to the following shape, and pivotted at P. It is connected to the spring of shutter at M by a small spiral wire spring, and on depressing the opposite end of the lever at K (which requires a touch of

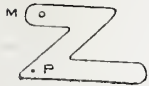


FIG 9

the thumb only), a smooth and sensitive means of releasing the shutter is provided. It may seem a matter of slight importance how this release is effected, but in reality much depends upon it. It is here the movement of the camera during exposure is most likely to occur. Again, other

methods, such as pulling a string or a pneumatic ball, do not leave the right hand at full liberty to grasp the camera, as should be done when holding it to the side, the thumb only being used to release the shutter.

The shutter should not be finally screwed into position until the lens is fixed to the camera, in order that accuracy of fitting between the "barrel" of the shutter and the lens hood may be secured. The finder, which is to be glued to the inside of the front at F, is shown in fig. 10. The construction is extremely

simple. It is merely a small box, with the front and top open.

Inside the front a bi-concave lens, B, is cemented, which throws the image upon the mirror, T. This image is viewed through the top, G, which is of plain glass. With a bi-concave lens of this description the image appears the right way up, and, as already mentioned,

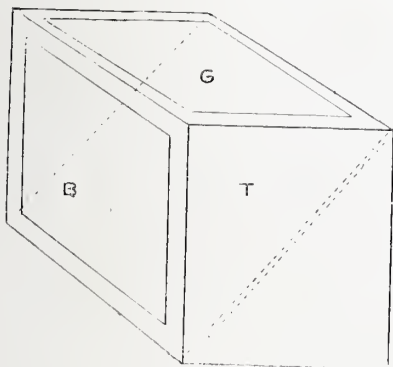


FIG 10

the brighter the sun the more clearly the view is seen, a striking contrast to the usual ground-glass finder with a hood, which the writer has found to be a "vexation of spirit." When the finder is glued into position, and the box is being fitted up, an aperture is, of course, cut in the top of the case to enable the operator to view the image on the finder. The front of the box being now complete, it must be strongly hinged to the flap D, fig. 8, in such a way that it will swing well back when open. This flap should be made of  $\frac{1}{4}$  in. stuff, with  $\frac{1}{2}$  in. battens of  $\frac{1}{8}$  in. stuff fixed on top and bottom with countersunk flat-head screws. Cleats are subsequently to be fixed to the top and bottom of the inside of the box to form grooves in which this flap can slide, and care must be taken that an accurate fit is obtained here. The object is that this flap should travel smoothly in its grooves, without side movement, and it should draw completely out if required. A small button or catch will be required to secure the front of the case to the side, when closed, and may be of any form the maker prefers. The stud should be on the front, and the catch on the side of box.

The focussing screen is carried in the inside of the case

(fig. 3, p. 418) opposite the flap D, and in similar groove

This position is better than that sometimes adopted, at the back of the case, where it occupies space which can be allotted to dark slides, and where it is more liable to fracture. The camera used inside the box is simply a miniature quarter-plate bellows camera, and if the amateur has not one of his own, he is advised to take a good look at a friend's. He will then be able to better understand its construction, about to be described, noticing especially the means employed to secure light-tight joints where the dark slides and roll-holder are fitted. A practical insight into the details of the different parts will, at this stage, be of great use, for however complete written instructions may be, they have not the value of a short study of the article itself, or one constructed on similar lines.

(To be continued.)

## A Holiday in Norway :

### PHOTOGRAPHY AMONG THE FJORDS.

THE holiday season is upon us now, and, indeed, for some fortunate people is already far advanced. But there are still many among our readers facing the question, "What shall I do with my holiday?" To them we say with all confidence, "Go to Norway, the amateur photographer's paradise." Every year makes it more popular as a holiday resort, and every year facilities for visiting it are increased and improved. But it has been left for the Company of which Mr. Alfred Rimmer, of Liverpool, is the public representative to conceive and to carry into execution a scheme which reduces the difficulties of the trip to a minimum and makes it possible to even the most timid sailor. The great obstacle to a holiday in Norway with many people is the journey thither. The North Sea has an unenviable reputation for treating those who travel over it in a most ungentle and inhospitable fashion, and even fair-sized steamers are tossed on its heaving waters as contemptuously as an ordinary rowing boat. To obviate this difficulty, Messrs. Rimmer have purchased the *City of Richmond*, formerly an Atlantic liner and a great favourite with those who had to cross what our American cousins so gaily call "the herring pond." This fine vessel, of nearly 5,000 tons gross register and 3,000 horse-power, they have entirely re-fitted and re-arranged for a series of yachting cruises to Norway and the fjords on her western coast. It is a grand conception. The ship is of immense size; her length is 445 ft., and she is a very handy vessel. The first voyage commenced on Saturday, June 4th, and from the time that the boat left Liverpool till it reached Newcastle on the 17th there were not more than a dozen cases of *mal de mer*. First-class passengers only are carried, at fares, inclusive of meals, ranging from twelve to eighteen guineas. Practically only three of the vessel's decks are used, the promenade bridge deck, 200 ft. long, the main deck of 445 ft., and the saloon deck arranged forward as a Japanese village with cabins and ornamentation gracefully done in bamboo work, and decorated forward and aft with palms and falling fronds of ferns set in pleasantly plashing fountains. Hot and cold baths, the electric light throughout the ship, and an English *cuisine* complete a rough sketch of the ship's equipment, while for amateur photographers a special feature is provided in the shape of a dark-room. A professional operator also accompanies the steamer, furnished with all photographic chemicals and necessities.

#### SAILING OVER A SUMMER SEA.

It was not strange, therefore, that over 300 passengers journeyed to Liverpool on Saturday, June 4th, to go aboard the *City of Richmond* for a fortnight's holiday in Norway. Prince's Landing Stage was a strange sight that day. The emigrant season had begun, and passengers rubbed shoulders with porters; Polish and Russian Jews jostled against stolid Germans; English artisans going off to the new world to see if fortune would be kinder there bade sad farewells, and all was hurry, bustle, and confusion. Special tenders had been chartered for the *City of Richmond*, which was lying some way down the river, and it was not till nearly four o'clock that the last passengers got abroad. But things had



gone all awry. The workmen had struck and delayed the refitting process; the stewards struck too, and the ship was for the time being in a state of confusion worse confounded. Many malcontents left the vessel, and the passengers resolved themselves into an indignation meeting which sat or stood continuously till late at night. Never had the Englishman's love of grumbling a finer opportunity, and never was opportunity more fully and promptly taken advantage of. But on this it would not be wise to dwell, for that night a severe storm raged outside the bar, and that at least was escaped. Meanwhile much was done to remedy the confusion, and soon after seven on Sunday morning the ship got under way. The moment the screw revolved discontent and discomfort disappeared as if by magic. The sun too, which had been sulking behind the clouds, broke brightly through them and beat down with cheering warmth. The good ship sped on swiftly over the rippling sea, the white gulls hovered in her wake or shot ahead on flashing outspread wings, the tiny "divers" ducked and swam merrily hither and thither, and soon in the purple haze of distance there loomed up the picturesque outlines of the Isle and Calf of Man. The voyage had commenced, and, in spite of the bad beginning, commenced under most favourable auspices. All day long we went sailing over a summer sea, the

"Tender curving lines of creamy spray"

falling away to port and starboard, and quickly fading again into the deep dark blue of the sleeping ocean; for it was Sunday, and a Sabbath stillness lay upon "the broad sea-wolds." Never a cloud flecked the blue above, and the horizon was unbroken till the rocky coast of Man came into view. Eager were the speculations as to what the land was, and many a reputation for geographical knowledge was then lost and won. But the Isle of Man fell astern, and while we lolled in the luxurious deck-chairs, and basked in the sun, and drew deep breaths of glorious sea-air, and hills of Cumberland, the Mull of Galloway, and some of the many "isles of the west" on the one side, and Erin's shores on the other were seen and passed and lost to sight.

The afternoon brought what must always be an impressive ceremony, a service at sea, admirably conducted by the Rev. Dr. Hyde, of Liverpool, who delivered a manly and straightforward address, fresh and forceful as the sea breezes that bore his words along the decks. And, as afternoon wore into evening, fresh scenes still unrolled themselves before willing and interested eyes. A big Australian clipper, with all her canvas spread, passed on her way south, the broad white sails gleaming in the sunshine. A school of porpoises crossed the steamer's track, greatly to the consternation of the more tender-hearted amongst the ladies, who were not afraid of, but for the poor creatures. They feared they would be cut in pieces; but happily a few minutes after they were seen astern, leaping their whole length out of the water, as who should say "See, we are unhurt!" So the ladies were consoled. Sunset falls late in these northern latitudes, and it was not till ten o'clock, when off Fair Head and Rathlin Island, that twilight came, a rosy flush dyeing the fore head of the western sky and the pale moon glinting on the quiet sea.

#### THE HAUNT OF THE MERMAID.

All the night the good ship travelled quickly north, but they were few who knew aught of its progress, for there is no soporific like the breath of the sea, and no lullaby like its ceaseless music. So all slept soundly, rocked not ungentle in the cradle of the deep, and woke in the morning to bless the happy thought of taking the roundabout route from Liverpool to Norway, *via* the West Coast of Scotland. For in the clear morning light, not more than a mile off on the starboard side, lay the Island of Skye, a land of gray and green and brown and gold, seamed and scarred by rocks and fringed with craggy cliffs, with ragged peaks jutting up everywhere—all rising fresh and fair out of a dark blue sea dancing and frisking into wanton foam-tipped little wavelets that gleamed and glistened in the sun. Further off on the port side lay Hebrides, the heights of which were girdled with fleecy clouds, sunshine, and shade, producing exquisite effects on hill and dale. For in the midst of the tumbled hills the sunlight fell all warm and golden on some soft valley, lending a brighter hue to the vivid green, and flashing on the stray patches of snow left lying in the shadowed ravines and cliffs. On such a coast it was easy to believe in the supernatural, and one half expected to see the mermaids rise from their "pale-green sea-

groves" and play among "the crisping ripples on the beach." To have seen—

"Betwixt the green brink and the running foam  
Sweet faces, rounded arms, and bosoms prest  
To little harps of gold."

would have surprised none who looked with seeing eyes on those strangely beautiful shores. So passed Skye and Lewes and the Glas Lighthouse, and Stornoway, with its fishing fleet of brown and white sails, swaying on the heaving sea, and glowing and gleaming as they swayed; for here the Atlantic swell first began to make itself felt. But the good ship still ran smoothly on past Sutherland and Ross-shire and Cromarty, where the scenery grew even more mountainous and wild. Clouds gathered, and sometimes hid the sun; but now and then stray shafts of gold broke through the shield of gray, and swiftly flung themselves on moor and hill, on bight and bay, and peaks that pierced the lowering clouds, giving, perhaps, even more picturesque effects than if there had been one broad continual blaze of sunshine. At last, with evening, came the coast of Cromarty, and Cape Wrath, which for long had been visible ahead, was left behind. It well deserved its name, for the sky above looked wild and stormy, though the sun shone warmly on the steep face of the rock and lit up some of the neighbouring peaks with a flush of fairy gold.

This was our farewell to Scotland. Tuesday was a gray day, but, as a Scotchman said, "Who was the waur o't?" There was occupation and amusement in plenty for those who needed it; music in the Japanese village, deck-quoits on the main-deck under the ample awning, whist and draughts and pleasant company, and the hours sped all too quickly by. This was the one day on which we were completely at sea, out of sight of all land, for after leaving the Shetlands in the early hours of the morning, our course lay right across to Norway, which was reached at about 5 a.m. on Wednesday. The first place that was touched was Aalesund, surely one of the prettiest and quaintest towns ever built. No better first impressions of Norway could have been wished than were received by those who, startled out of sleep by the noise of the cable as the anchor was let go, ran up on deck in somewhat scanty attire and cheered, as they found they had reached land, "where they fain would be." Aalesund is built on a long and narrow peninsula, and shoots out among the numerous islands dotting the coast just below the Molde Fjord. It is quite a substantial town, too, and contains 6,000 inhabitants. The houses cluster thickly over the sides and back of the rocky peninsula, and cling to the sides of the hollow cup that surrounds the harbour. Tiny, blank-walled little doll's-houses they seem, reminding one of the Noah's arks of childhood, but painted white, and yellow, and light hues of brown. They are all jumbled together, too, in most picturesque confusion, and stand out in vivid relief against the gaunt rocks and scanty verdure that thinly covers them and creeps down to the water's edge, lightened here and there by a cluster of golden kingcups. The harbour is barred with a quaint little breakwater, and provided with a quaint little jetty, and at the back of the delightful jumble of grey rocks and green grass, and golden flowers, and white and brown houses, and brown-sailed fishing-boats—behind all this tower up the everlasting hills, their giant sides all scamed with snow, and their crests hidden in wreaths of cloud. To the north of the town and sheltering it, is Fløifjeldit, a lofty hill which gives a fine view of the scrambling town and the islands and opening waterways that lie on the seaward side of it.

#### With a Camera in Spain.

By AUSTIN J. KING.

(Continued from p. 476.)

THERE are many things in Granada well worth seeing besides the Alhambra. In the Cathedral are the beautiful marble tombs of Ferdinand and Isabella, and of their daughter Crazz Luno and her husband. The Carthusian monastery and the Church of St. John of God are beautiful and interesting sights, and those who want picturesque studies for the hand-camera have only to go into the gipsy quarter.

From the time of the Moors there had been a series of caves dug out of the friable hill opposite to the Alhambra. These are now, and have for generations been, occupied by a colony of some 200 gipsies. They are not allowed in Granada, and form a



colony of outlaws. The caves are large and dry, and, as a rule, beautifully clean; each contains several rooms. The gipsy dance is rather a fraud, but worth seeing once; the girls and boys are perfect models of beauty, both of form and feature.

The streets abound with curious sights, amongst them the dressing and cleansing of the hair (the latter no mere formality) on the pavements. From Granada one may journey on to Cordova. Here is the great mosque, now a cathedral, which may boast that it covers more ground than any place of worship in the world. On this site stood first a temple of Janus, then a Christian basilica, then a mosque, which in turn became a church.

When the Western Khalifate was established, it was considered necessary that the devout Mussulmen of Spain should not have to make a perilous journey to Mecca in a hostile country, in order to comply with the precept of pilgrimage, and a vast mosque was therefore built. The Christian half of the cathedral was purchased, and the priests quitted it, bearing in solemn procession the relics and images of the saints (Bell). Abd-el-Rahmann, the first of the Spanish Khalifs, commenced the present mosque in 786, and it was continued by his successors.

The modern coro or choir, which occupies the middle of the building, takes off the grandeur of the effect of the forest of aisles. In the Court of Oranges in front of the mosque were marble basins with fountain jets, each shaded by an orange tree (Bell). The aisles were originally open to this court, nineteen large ones with thirty-eight smaller ones between. These columns are of various marbles, and it is said that some of them were brought from Temples at Carthage, and others from Nismes and Narbonne in France.

It is a curious thought that the spoils of the kingdom founded by Queen Dido should be found in Spain supporting a Christian church built by Arabians as a mosque. The aisles led to the Mihrab, a niche facing in the direction of Mecca, wherein was treasured a copy of the Koran, said to have been made by Othman, the fourth of the Khalifs. The copy was bound within golden plates encrusted with diamonds, and was enclosed within a casket of aromatic wood studded with rubies and emeralds.

Beside the Mihrab was the Mimbar or pulpit, a wondrous structure of ivory and gold, whence the Imaum read the homily on Friday mornings. A low dwarf wall within the doorway marked off the sacred ground. Each Moslem, before he ventured to step over this wall, made the ablutions required by the law, and removed his slippers, and was then careful to enter with his right foot first.

Within, the spectacle must have been a grand one. Many hundreds of lamps hung from the cedar roof; many of these were the inverted bells pillaged from Christian churches. Al Manzour, the renowned Vizier of Hachem II., actually carried off the bells from the shrine of Santiago at Compostella (in the extreme north of Spain) and hung them in this mosque. The walls were lined with white marble, inlaid with gold letters with verses of the Koran, the Arabic lettering so encrusted with crystal that the characters looked like letters of light; 300 attendants burnt sweet-smelling ambergris and aloes wood in censers, and prepared the scented oils for the lamps. If we can believe the Arab writers, some of the inner doors of the mosque were of gold, and the pavement of the Mahsura of silver.

In countries where Mohammedism is dominant, no Christian or Jew is allowed to enter. But in Algiers and Oran entrance is freely permitted, subject to the requirement that the shoes be removed or cased in large covering slippers. You can never enter a mosque without seeing several Mohammedans engaged in earnest prayer (Bell). There are three prostrations enjoined, the forehead being bent to the ground. It is very curious to see the gaudy French tapestry carpets which are often placed in the mosques, besides ancient rugs of great beauty of colouring and design.

Seville, too, has claims on the photographer which are not to be disregarded. The Alcazan and the house there, known as Pilate's house, present specimens of Moorish architecture second only to the Alhambra.

The gardens were perfect dreams of beauty and luxury; every plant of gorgeous colouring, of graceful foliage, of delicious perfume; the rose, the stately palm, and flower-laden magnolia, the weeping willow, the cypress, the orange, the lemon, the oleander, and the myrtle grew in luxuriant abundance. Fountains sparkled in the brilliant sun, and large streams of water swiftly rushing, cooled the air. Lest the paths should reflect the glowing heat, concealed water pipes converted them at will into purling brooks,

with interlacing water jets, and left them damp and cool for the feet of the loiterer.

But although bull-fights are very horrible, they yet form the great pride of Seville, and although the subject is not peculiarly adapted to photography, I will quote a short description from my contemporaneous diary. At 4 o'clock I went to see a bull fight. The bull ring is like a large Roman theatre, 52 yards across the arena. Stone benches rose tier upon tier all around, and at the top was a gallery for the elite. At one end was a band stand, and beneath this a sort of "box royal."

Three horsemen pranced around on wretched screws fit only for a knacker's yard. Nine or ten men on foot dressed in a circus-like costume also walked round.

Then a door beneath the royal box opened and a bull rushed in. It was a fine large one, but apparently half starved, his flanks looking thin and his walk uncertain. He made a rush at one of the footmen, and he baffled it with a large cloak he carried. This process was repeated again and again, the men sometimes being driven to the palisade, over which they jumped.

Then the horsemen spiked the bull with their lances, and the bull rushed at them and gored the horses. The men were on high-peaked saddles and had on thick leather breeches, so that they were practically safe, and when the horse was thrown, the footmen distracted the bull's attention so as to give time to the rider to escape.

Then the footmen took darts with the handles covered with coloured paper. Standing opposite to the bull, they excited him to rush at them, and at the moment of jumping aside, planted the darts each with one hand at the back of the creature's neck. This process each man went through in turn, and the infuriated bull made frantic rushes, but weakly and without much persistence.

Then entered the toreador, handsomely dressed and carrying a long straight sword and a red cloak. He teased the bull with the cloak, and parried his rushes with dexterity. The idea is that on one of the rushes he is to plunge his sword into the neck, sever the spinal cord and cause instant death. But the bull was too exhausted to rush much, and was standing stock still when the toreador made his plunge. He left his sword plunged to the hilt in the body, but the bull did not fall. One of the men recovered the weapon and after three or four tries he succeeded in causing death. I saw another bull similarly treated, and left after twenty minutes' stay. There were many bulls set aside for slaughter. I could not see any bravery or skill or any wholesome excitement at all to compensate for the absolute brutal cruelty. My sympathies were throughout with the bull.

The people were mad with excitement, shouting, hissing, and applauding as a stroke was given or missed. It was just such a scene as one connects with the old Roman cry of "Christianos ad Leonis" a lust for blood and slaughter.

But Spain has not been done photographically when the principal cities have been visited. There are many of the quaint little old-world houses both in the north and south streets, and buildings which will delight the artist.

The churches in the extreme south, which were built at once as places of worship and fortresses against the Moorish incursions which were so common, would form a most interesting series for the camera. There are good examples at Luz, S. Saviour, and Solom in the Pyrenees.

In such buildings is found an exterior fortification—machicolated walls, and overhanging battlements whence pitch and boiling oil and lead might be poured on the heads of assailants, after the amiable custom of the times.

The little towns of Tuenté Arabia and Hernani are amongst the quaintest and most picturesque to be found in Europe. Everything is old-fashioned, quaint, and peaceful, everything speaks to you of a grandeur and an importance which has gone. The silence strikes one as something almost awful.

I drove to Hernani from San Sebastian, and exposed a few plates, but when we were leaving the town, the local army, consisting of a corporal and two privates, barred the way and made our party pay two piastres. Whether it was a fine or fee for entering the town, or a fee for leaving the town, or for being allowed to take photographs in the town, I do not know, and I suppose I never shall know.

I am ashamed to find to what a length these desultory notes have expanded themselves, although I have said but few of the things I set myself to say.

If I conclude with a note or two as to equipment, it is not in



the hope of conveying information to you, but in order to start a discussion from which I may myself glean knowledge.

I have travelled with Eastman stripping films, but I found they would not strip with the celluloid films, but I found some difficulty in making them work well on the roller. I have used the England celluloid films in carriers, and found them answer well, but a little pressure in packing is apt to be prejudicial.

I have returned therefore in a reactionary manner to glass. I find that a convenient plan is to start with dark slides full and a light-tight book empty; this book holds a dozen. The exposed plates are shifted into the book until it holds a dozen, and are then transferred into a plate box, by this time empty. This saves all danger of mixing exposed and unexposed plates.

The slides I carry in a sling case, which also holds lenses and sundries. The camera is carried by its own leather handle, but protected by a light cover, which can when out of use be put into the pocket.

In this way a whole-plate camera, slides, and stand can be comfortably carried without assistance.

As to size, I own to a reactionary preference for whole-plate. The picture is big enough to frame without enlarging, and a reduction to a lantern size can be made in a reducing camera as easily as by contact printing.

Let us hope for a good season, good subjects, good success, and good temper to bear the destruction of these hopes.

## Gelatino-Chloride of Silver Paper ; its Manipulation.

By J. C. S. MUMMERY.

(Continued from page 477.)

IF the toning and fixing are carried on in separate baths, greater reduction will occur than if a combined bath is used. The prints, if preserved from light and air, may be kept two or three weeks before toning, but if stored for much longer times the whites are apt to become dirty and difficulty may be experienced. The toning or bringing of the prints to a more pleasing colour is one of the most important of the operations connected with the process, and is effected by a variety of substances, the principal being gold, uranium, or platinum, in combination with other substances. It is impossible for me to wade through a list of the numerous baths recommended, for their name is legion, but will give the formulae for a few with which my small experiments have been conducted. Speaking generally of toning, I have a strong leaning to the more rapid baths as being the most interesting to work with, something of the charm of development entering into the work as the prints visibly change colour. Day-light is undoubtedly better to tone by than artificial light, the latter requiring a considerable experience of results. The light, however, must be weak, and the prints given no unnecessary exposure to it. In all cases the tone of a print is to be judged by transmitted light, and not by reflected light, the appearance of the print in the toning bath being no sure guide to the tone when fixation is complete. For instance, Obernetter paper in a uranium toning bath will appear quite a dark purple-blue, but changes almost instantly to brown when placed in the hypo. The tone must consequently be judged by looking through the print at the source of light. The changes of colour made by prints in some of the toning baths is very striking, brilliant yellows, red, claret, purple, and blue often succeeding each other. Cleanliness cannot be too much insisted upon at all times, but more especially during the operation of toning, especially where separate toning and fixing baths are used simultaneously. In the instructions given with the Aristotype paper, the printer is directed to use one hand only for the toning bath, and the other only for the fixing, transferring the prints as toned from one hand to the other, and if this method is carried out, the chances of stained prints are greatly reduced, the faintest trace of hypo from fingers or other sources being sufficient to discolour the prints. The toning bath must in nearly all cases be preceded by a thorough removal of the soluble silver by washing in several changes of water for from ten to fifteen minutes, the prints being placed in the water face downwards, else a deposit is liable to form upon the face; the first washing water is seen to rapidly become discoloured. The first wash of water is best poured off

as quickly as possible, as it has the effect of degrading the whites if allowed to remain in contact with the prints; in the after washing, however, the water may remain unchanged for a longer time. Some toning baths will require the prints to have less preparatory washing, and I note that the instructions issued with the Celerotype state that one good washing is sufficient, and that the paper contains no free silver.

Toning with gold may be roughly divided into two methods—the first where the toning and fixing baths are kept separate, and the second where the toning and fixing are carried out in the same bath and at one operation. There is, I think, no doubt that the first method is the best and the most certain, and the chances of permanency much greater, but it involves a little more trouble. I may here draw attention to the defects of the combined baths. Probable want of permanency in the print, owing to the exhaustion or partial exhaustion of the hypo, the bath continuing to tone but fixing imperfectly, the latter being, of course, the most important operation. Then, again, many combined baths have alum in their composition, and the mixture of this with hypo causes a deposit of sulphur and oxide of aluminium and the liberation of sulphurous acid, leading in all probability to fading and degraded prints. The alum is used to arrest the disintegration of the gelatine by the sulpho-cyanide, and to ensure the regularity of toning. Turning now to the gold baths for after fixation, nearly any good bath may be used; that given with the Aristotype paper I have always found to work well.

| A.                         |    |    |    |    |    |        |
|----------------------------|----|----|----|----|----|--------|
| Water                      | .. | .. | .. | .. | .. | 2 oz.  |
| Chloride of gold           | .. | .. | .. | .. | .. | 2 gr.  |
| B.                         |    |    |    |    |    |        |
| Water                      | .. | .. | .. | .. | .. | 3 oz.  |
| Sulpho-cyanide of ammonium | .. | .. | .. | .. | .. | 30 gr. |
| Hypo..                     | .. | .. | .. | .. | .. | 1 "    |

One part of A poured into one part of B—not the reverse. It is necessary to dilute this a little, say about one-third more water. The bath must not be used until the red precipitate is redissolved and quite colourless. If the hypo be omitted, brown prints may be obtained. The bath recommended by Obernetter for his paper is good for purple tones, and is as follows:—

| A.                      |    |    |    |    |    |         |
|-------------------------|----|----|----|----|----|---------|
| Ammonium sulpho-cyanide | .. | .. | .. | .. | .. | 3 drms. |
| Sodium hypo             | .. | .. | .. | .. | .. | 5 gr.   |
| Water, to               | .. | .. | .. | .. | .. | 20 oz.  |
| B.                      |    |    |    |    |    |         |
| Distilled water         | .. | .. | .. | .. | .. | 3 oz.   |
| Gold chloride           | .. | .. | .. | .. | .. | 15 gr.  |

Pour about 2½ oz. of B into A, and stir well while doing so, until quite clear, then add 3 to 6 oz. of water; for reddish-brown tones increase hypo to 10 or 15 gr.; this bath may be kept and strengthened with gold as required. The bath recommended for Ilford paper is as good as any, and very simple:—

|                            |    |    |    |    |    |        |
|----------------------------|----|----|----|----|----|--------|
| Water                      | .. | .. | .. | .. | .. | 16 oz. |
| Sulpho-cyanide of ammonium | .. | .. | .. | .. | .. | 30 gr. |
| Chloride of gold           | .. | .. | .. | .. | .. | 2 "    |

This bath should be kept for a day before using, and tones in five or six minutes, and the bath when it refuses to tone should be replenished with gold or filtered, and used as a base for a new bath. A good bath for brown or sepia tones is:—

| 1.                           |    |    |    |    |    |                 |
|------------------------------|----|----|----|----|----|-----------------|
| Water                        | .. | .. | .. | .. | .. | 50 oz.          |
| Ammonium sulpho              | .. | .. | .. | .. | .. | 1 "             |
| Sat. sol. ammonium carbonate | .. | .. | .. | .. | .. | 15 to 20 drops. |
| 2.                           |    |    |    |    |    |                 |
| Water                        | .. | .. | .. | .. | .. | 20 oz.          |
| Gold chloride                | .. | .. | .. | .. | .. | 1 gr.           |

It must not be used till quite clear. It works well with Celerotype, but I have never been able to obtain satisfactory results upon Obernetter paper. For bluish-black tones Liesegang's formula works well:—

|                            |    |    |    |    |    |        |
|----------------------------|----|----|----|----|----|--------|
| Water                      | .. | .. | .. | .. | .. | 25 oz. |
| Sulpho-cyanide of ammonium | .. | .. | .. | .. | .. | 1 "    |
| Phosphate of soda          | .. | .. | .. | .. | .. | 1 "    |

A few hours before toning, add to 10 oz. of this solution, a solution 5 gr. of chloride of gold in 1 oz. of water. After this bath has been used, add some more of the gold solution, it can then be used again. And there are many other equally good



baths given in the instructions issued with the various papers, which it is not worth while entering upon in detail.

Taking a print from the washing water, place it in the bath, being sure it is covered with the solution and free from air-bells, then watch the results with a bath strong in gold. The change will begin almost at once; with some baths the prints will rapidly turn to a bright yellow, and on to brown and purple, and when arrived at the required tone, or slightly deeper, judging by transmitted light, and transferred with a good rinse in clean water, to the fixing bath. It is recommended, however, to wash the Ilford P.O.P. for five minutes before fixing. In the case of a slow bath several prints may be toned at once, taking care to keep them in pairs, face to face, as otherwise the toning solution will not flow between them, but they will cling together and tone unevenly. Toning may be stopped at any point desirable, and considerable variation is thus obtained. Should the bath become exhausted whilst in use, gold should under no circumstances be added whilst the prints are therein, or unequal toning will result. In the event of the bath containing too much gold, the edges of the prints may tone before the centre; an alum bath before toning will generally prevent this. The fixing bath is best made of 1 oz. of hypo to 10 of water, without the admixture of any other substance, and the print should be placed therein face upward, stirred about, thoroughly wetted, and allowed to remain therein certainly not less than fifteen minutes. The toned prints may, of course, be saved, and all fixed at once, and it is then best to arrest the toning by placing the print in a bath of salt and water. The former method will, however, generally give a better tone. The true tone of the print is not attained until it is properly fixed, a considerable loss of tone and strength often taking place on the first immersion in the fixing bath; but when fixation is complete this should return. It is undesirable to use too strong a fixing bath, as the tone of the prints may be permanently reduced. I have never yet seen any indication of frilling or blistering with these papers, but I conclude that it does sometimes occur, as we find so many formulæ for its prevention. If such symptoms are visible and an alum bath be used, as is generally recommended, the prints should be laid therein face downwards, and must be most effectually washed after the alum bath, and before toning or fixing as the case may be, or the sulpho-cyanide or hypo will be decomposed, and the prints will eventually turn more or less yellow. A good bath, I believe, is chrome alum, 1 part; distilled water, 100 parts, with the addition of ammonia until a permanent precipitate is formed. It should be filtered, and three or four minutes in this bath will effectually harden the gelatine and enable it to maintain its enamelled or matt surface less impaired by wear. In washing the prints the object to be attained is to completely remove the hypo in the least possible time, for if the hypo be not eliminated the prints are unstable; and if washing be too prolonged, the gelatine will possibly partly decompose. There are many good washers on the market, and those perform their work best which rely upon a stream of running water entering at the top with not too much force, and draw off from the bottom below the prints with a good supply of water; with such a washer about two hours should be sufficient. Effectual washing may also be carried out in a series of changes of water at short intervals, or the moisture may be several times squeezed out upon glass or other substance with washings in fresh water in between. All the formulæ for the removal of hypo by other agents should be studiously avoided, as by their means the salt is merely converted into other compounds almost as detrimental to stability, and is not eliminated. Combined toning and fixing baths, the defects of which I pointed out, probably owe their extended use to the saving of trouble attendant upon the loss of separate fixing, but some of them are stupendous mixtures, and I imagine the chance of failure is rather increased by this complexity. The following bath as recommended by Liesegang answers very well with all brands of paper:—

| A.                         |    |    |    |    |        |
|----------------------------|----|----|----|----|--------|
| Water                      | .. | .. | .. | .. | 24 oz. |
| Hypsulphite of soda        | .. | .. | .. | .. | 6 "    |
| Sulpho-cyanide of ammonium | .. | .. | .. | .. | 1 "    |
| Acetate of soda            | .. | .. | .. | .. | 1 "    |
| Saturated solution of alum | .. | .. | .. | .. | 2 "    |

## B.

Dissolve 30 gr. of nitrate of silver in  $\frac{1}{2}$  oz. of water, add 30 gr. of common salt, stir well till a white precipitate is

formed, pour B into A, and leave it for a day. Then filter and add the following solution:—

| C.                   |    |    |    |    |        |
|----------------------|----|----|----|----|--------|
| Water                | .. | .. | .. | .. | 6 oz.  |
| Chloride of gold     | .. | .. | .. | .. | 15 gr. |
| Chloride of ammonium | .. | .. | .. | .. | 30 "   |

The bath will keep for any length of time. It can be used over and over till the light half tones of the print become of a greenish hue, which is an indication that the fixing agent is exhausted, when it must be replaced by a fresh bath. A fresh bath may take an hour or more to tone to the violet shade; after having been used several times it will tone quicker. The bath recommended by the Blackfriars Sensitising Company for their paper is very similar. The saturation of the bath with chloride of silver, which is necessary to the proper working of all combined baths, is here obtained by putting in waste prints, scraps, etc.:—

|                            |    |    |    |    |                   |
|----------------------------|----|----|----|----|-------------------|
| Water                      | .. | .. | .. | .. | 24 oz.            |
| Hypsulphite of soda        | .. | .. | .. | .. | 6 "               |
| Sulpho-cyanide of ammonium | .. | .. | .. | .. | 1 "               |
| Acetate of soda            | .. | .. | .. | .. | 1 $\frac{1}{2}$ " |
| Alum, saturated solution   | .. | .. | .. | .. | 10 "              |

Fill the bottle containing this solution with scraps of sensitised paper, bad prints, etc., which have not been fixed. Filter, allow to stand for one day, then add—

|                      |    |    |    |    |        |
|----------------------|----|----|----|----|--------|
| Water                | .. | .. | .. | .. | 6 oz.  |
| Chloride of gold     | .. | .. | .. | .. | 15 gr. |
| Chloride of ammonium | .. | .. | .. | .. | 30 "   |

With this bath the prints require no preliminary washing. The prints are plunged direct into the solution and allowed to remain until the desired tone is arrived at. A good and simple bath is:—

|                  |    |    |    |    |       |
|------------------|----|----|----|----|-------|
| Chloride of gold | .. | .. | .. | .. | 6 gr. |
| Nitrate of lead  | .. | .. | .. | .. | 3 "   |
| Sodium hypo      | .. | .. | .. | .. | 3 oz. |
| Distilled water  | .. | .. | .. | .. | 20 "  |

This bath has the advantage of being free from alum. It is best in all cases when mixing combined toning and fixing baths, to dissolve the gold separately and neutralise it with powdered chalk, and afterwards to filter and add to the other salts, which should also have been dissolved and filtered. The necessary saturation of the bath with chloride of silver I have already alluded to. The final washing is, of course, the same as where two separate baths are used. The weakest point in the combined baths is the uncertainty as to how far the prints are being fixed. This will, after a time, show itself by a greenish tint in the white. The bath is then worse than useless. In toning with uranium and gold, the following is a good bath:—

|                    |    |    |    |    |        |
|--------------------|----|----|----|----|--------|
| Chloride of gold   | .. | .. | .. | .. | 4 gr.  |
| Uranium nitrate    | .. | .. | .. | .. | 4 "    |
| Chloride of sodium | .. | .. | .. | .. | 60 "   |
| Acetate of sodium  | .. | .. | .. | .. | 60 "   |
| Distilled water    | .. | .. | .. | .. | 16 oz. |

Dissolving the uranium and gold in a little of the water and neutralising with chalk.

Platinum may be used for toning, and according to Obernetter the following formula will render pure sepia tones:—

| 1.                         |    |    |    |    |        |
|----------------------------|----|----|----|----|--------|
| Chloro-platinite of potass | .. | .. | .. | .. | 15 gr. |
| Distilled water            | .. | .. | .. | .. | 1 oz.  |
| 2.                         |    |    |    |    |        |
| Neutral oxalate potass     | .. | .. | .. | .. | 2 oz.  |
| Phosphate of potassium     | .. | .. | .. | .. | 12 gr. |
| Distilled water            | .. | .. | .. | .. | 40 oz. |

Use 2 parts of No. 2 to 1  $\frac{1}{2}$  parts distilled water, and 1 part of No. 1. It is essential that chloro-platinite of potassium be used, and not the chloride of potassium of commerce. The formula recommended by the Platinotype Co. is also considered good:—

| 1.                            |    |    |    |    |        |
|-------------------------------|----|----|----|----|--------|
| Oxalate of potash             | .. | .. | .. | .. | 5 oz.  |
| Mono-potassic ortho-phosphate | .. | .. | .. | .. | 3 "    |
| Water                         | .. | .. | .. | .. | 50 "   |
| 2.                            |    |    |    |    |        |
| Potassium chloro-platinite    | .. | .. | .. | .. | 60 gr. |
| Water                         | .. | .. | .. | .. | 2 oz.  |



taking 3 parts of No. 1, 1 part of No. 2, and 2 parts of water. These baths will not keep more than a couple of days. The prints must have a preparatory washing, as already described, and be prepared for the toning bath by a final wash in distilled water. They had best be placed in the toning bath face upwards, and when the action is complete, must be thoroughly washed in cold water, made slightly alkaline, with carbonate of potash or soda, and are fixed as before described. The prints having been toned, fixed, and washed, there are several methods of finishing them. I generally prefer to dry them preparatory to any further operation, as I am inclined to think that they are easier of manipulation if not quite so saturated as when taken direct from the last bath. If, however, they have been treated with chrome alum, and it is desired to finish them with any other than the natural surface, they must not be allowed to dry, as no amount of washing will render them soft enough for future manipulation. Drying must be spontaneous, and heat must on no account be applied; hanging them by clips to a string is a good method, or laying them over a couple of parallel rods or strings. Care must be taken that no dust settles upon them, especially dust from a dark-room or laboratory. If left to dry thus, their natural surface will be equal to or more shiny than albumenised paper, and they may be thus trimmed and mounted. Should any deposit from the water appear upon the face of the print, it may be removed by wetting the print, and gently rubbing the face with a tuft of cotton wool. The detail in the prints when dry will be considerably clearer than when wet, owing to the greater opacity of the paper. The surface of the prints may be slightly reduced in shininess by pressing them between sheets of blotting paper before they are quite dry. They must not, however, be wet, or sticking will occur. To finish the prints with a matt surface, they may be squeegeed upon fine ground-glass, such as should be used for focussing screens; the ordinary ground-glass of commerce will not do, as it will show glazed specks. The glass must be thoroughly clean; an ordinary scrubbing brush and Brookes's monkey brand will effect this in a few moments, and it can then be left to dry, or be dried with a cloth, and the surface dusted over with a tuft of cotton wool, dipped in powdered talc, otherwise known as french chalk, which in turn is removed by rubbing with a piece of clean silk or linen, so that no talc is visible. The prints having been soaked for a few minutes, are then pressed into contact with the glass, using a roller squeegee and some little force, and a piece of clean paper on the back of the print, to prevent tearing. The air must be entirely pressed out, and the prints will then adhere more closely to the glass, and when dry, a piece of cartridge paper or special waterproof paper, sold for the purpose, and cut to the exact size is mounted upon the back. When the prints and their backing are thoroughly dry, they will easily peel from the glass support, just raising one corner with the edge of a knife. Should the prints refuse to move through the use of common or dirty glass, they may be taken off by soaking in a weak solution of hydro-chloric acid and water. There is another method of matting the surface, which I have been trying lately, namely, by lightly rubbing the surface of the print with clean white pumice or other powder, having a fine tooth. This is a vastly easier method and I think as good. Prints which are lighter than desired are especially benefited by matting their surfaces, and will appear considerably stronger than if finished with a glossy surface. In like manner prints may be given on enamelled surface by squeegeeing upon the best British polished plate glass. The plate glass must be carefully handled or it will get scratched, it being comparatively soft after the removal of the surface in polishing. Polished or matt celluloid, ebonite, tin-type plate, or enamelled metal plates may be obtained and used for the same purpose as glass, and these will not require the use of talc, but in the event of the prints not stripping properly a trace of sweet oil may be rubbed on and removed. The principal point is to let the prints get thoroughly dry before attempting to strip them off. The waterproof backing before mentioned is applied to facilitate mounting as if the prints are stripped from the supports without it, difficulty may be experienced in preserving the highly glazed or matt-surface, when the mountant is applied and the wet strikes through the prints. The glass may also be prepared with wax and benzole in a somewhat similar manner:

|              |    |    |    |    |    |        |
|--------------|----|----|----|----|----|--------|
| Yellow resin | .. | .. | .. | .. | .. | 36 gr. |
| Yellow wax   | .. | .. | .. | .. | .. | 24 "   |
| Benzole      | .. | .. | .. | .. | .. | 2 oz.  |

formed into a solution and spread over the glass with a tuft of cotton wool, and then polished off with clean cotton wool. The print is floated face downward in a dish of clean water, the plate inserted below it, and the two brought up and out of the water and treated as before described. Gelatino-chloride prints are more difficult to mount than prints upon albumenised paper, but failure need never result if only ordinary care be exercised. Those prints which are backed with paper may very well be mounted with starch or similar mountant made as thick as possible, taking care that no hard lumps are formed. If the prints are finished with a matt or brilliant surface, and do not receive a backing of waterproof paper, starch and paste are not suitable mountants, and recourse must be had to shellac and alcohol, or gelatine and alcohol. These may be bought ready prepared at most dealer's, and if used with care the glazed or matt surface will be little the worse. If desired to manufacture these mountants, receipts are to be found in such books as the "British Journal Almanack," etc. The exact position the print is to occupy should be marked upon the mount if there is a wide border; the print laid face downwards upon a piece of clean blotting paper, and the mountant brushed rapidly over the back with a stiff hog-hair tool. The mountants are mostly used hot, being stood in a basin of hot water. The mountants may also be applied to the edges only by laying a sheet of paper upon the back of the print, cut so as to show one-eighth inch margin all round, the mountant being brushed upon this exposed part; the prints, must, however, be very slightly damp to allow of this treatment without after-cocking. Another method of mounting exceedingly easy to work is to squeegee the trimmed print upon glass, and when nearly dry to work some strong starch into the back with a stiff brush, and leave to dry, and then strip from the glass; the mount is then wetted with sponge and water, and the print laid upon the wet mount and squeegeed down. A solution of india-rubber may also be used for mounting round the edges, and may be bought ready prepared, but is liable to decay. If it is desired only to retain the ordinary surface of the paper, the simplest method is to soak the trimmed print for a few minutes in cold water, then lay face downwards upon a sheet of paper, blot off the moisture from the back, and apply a warm gelatine and alcohol mountant, lay the print in its position upon the mount and on the wet face of a clean sheet of note paper, and press down with a soft pad of clean linen, wetting if necessary. The points to be observed in mounting are not to apply too much mountant, or it will press out at the edges, and not to place the prints under pressure until almost quite dry. There is a considerable advantage in using the best prepared mounting boards, as many deleterious chemicals, among them hypo and acids, are used in the manufacture of ordinary cards. Spotting may be done with pigment mixed with gum arabic, and if carefully executed will not show. I am afraid in reading this paper I have been going over ground which most of you are as well or better acquainted with than I am. Instructions for the process are scattered broadcast over the land, and anyone who will read and carefully follow them out may be assured of good results. The mechanical part of the process requires only care to work it, and so long as it is done well, the less time occupied by it, the more effort may be concentrated into those operations such as printing and toning where there is opportunity for the use and display of artistic feeling and knowledge. The capacity for making brilliant prints by this or that process is, to my mind, as nothing compared with the powers to use to the full these qualities by which we may easily render or alter to suit the requirements of tastes, the forms and values, as they are often crudely represented, upon our negatives; and in its capacity to fulfil these requirements I believe the gelatino-chloride process to be capable of holding its own against any other.



The first part of the first half of Eder's well-known "Handbuch der Photographie" is now complete, and contains "Geschichte der Photographie," "Die Chemischen Wirkungen des Lichtes," and "Die Photographie bei Kunstlichem Licht."

The Kent, Sussex, and Hampshire gipsies will be somewhat startled this week by the appearance of the Duke of Newcastle's splendid caravan "The Bohemian" in their midst. His Grace starts from Tunbridge Wells on Thursday morning, accompanied by Mr. Gambier Bolton, F.R.G.S., and we hear that a lecture and perhaps a book will follow in due course. Both should prove interesting, as plenty of adventures will be met with *en route*.



## Societies' Meetings.

**Accrington.**—An exhibition of apparatus, etc., for members only, was held on the 13th inst. The attendance was very large, including the President, Dr. Clayton. The principal exhibits were four magnificent lenses of the latest patterns, kindly lent by Messrs. Ross and Co., London. Mr. Clarence Jones (representative for Messrs. Talbot and Eamer) exhibited some splendid hand-cameras, dark slides, etc., made by his firm, and the way in which he described them gave satisfaction to every one present. Mr. Mitchell, of Blackburn, exhibited Watkins' Exposure Meter and various other photographic novelties, with which the members were very much pleased.

**Barrow.**—A meeting of the above section was held on the 16th inst. in the club-room, Mr. Weston in the chair. Mr. W. Dunlop, Vice-Chairman, gave a practical demonstration on "Printing, Toning, and Fixing the Ilford Printing-out Paper," also showing the various methods for giving different surface effects, and the manner of washing and vignetting prints. A good many questions were asked on the various points treated, and all present seemed to thoroughly appreciate the lecture. On the 18th inst. the members had an outing to Coniston, at the invitation of Mr. A. Blechynden, the chairman of the section, who generously defrayed all the expense. Twelve members left by the 10.55 train, and six followed by the 1.55. In the earlier part of the day the weather was cloudy and threatened rain, but fortunately as the day advanced the weather improved, and was all that could be desired. The route taken was up Tawdale and on to Tarn Hows. One hundred and fourteen plates were exposed, including views of mountain scenery, Tarn Hows; cottages and animals. At six o'clock the party sat down to a substantial tea at the Crown Hotel, the chairman presiding, and the table was also graced by the presence of Mrs. Blechynden. After the good things provided had been disposed of, three plates were exposed on the group.

**Bedford and District.**—Special meeting on 17th inst., the President, Rev. H. V. Maedona, in the chair. The meeting was specially called to consider a proposition originating with the President for holding a public exhibition of photographs. There was a fairly good attendance, and the President, in an interesting speech, put the matter fully before the members. The Secretary read extracts bearing upon the subject from the Committee minute-book, and finally the motion "That a public exhibition of photographs be held," was put to the meeting and carried unanimously. A second motion, "That the exhibition be held early in October," was also carried. Details were necessarily left for future consideration, but it was decided that there should be a special class for ladies and also for schoolboy members. Members were reminded of the excursion on the 22nd inst., and after some general conversation the meeting terminated.

**Burslem.**—The ordinary monthly meeting of the Society, postponed from the previous week on account of the Whitsuntide holidays, was held in the Town Hall on the 14th inst., Mr. E. B. Wain, President, in the chair. There was a large attendance of members. The rules for the medal competition were read and approved. The date for the next excursion to the Dane Valley was fixed for June 30th. Mr. J. Wedgwood Myatt then gave a paper on "Apparatus, and How to Use It." The reader of the paper illustrated his remarks in a practical manner, and also showed an ingenious plumb indicator of his own design. An interesting discussion followed. On the table was a large show of apparatus brought by members, including Thornton-Pickard foreground and Funnell shutters, Hibbard's flash lamp, Lancaster's Rover hand-camera, Barnett's dark slides, Jones's cheap view-finder, Watkins' exposure meter, etc. Ross's new Concentric lens was also shown by Mr. R. S. Burgess, ex-president, and attracted considerable attention. Prints from negatives taken on the recent Diddulph excursion were laid on the table for criticism, as were some taken by means of the Todd-Forret lamp, printed on bromide paper and toned with uranium. This meeting concludes the present session. The next indoor meeting will be on September 6th, when Mr. F. C. Powell will give a demonstration on "Development of Negatives and Lantern Slides."

**East London.**—Ordinary meeting held on 14th inst., Mr. C. Tylec in the chair. The principal business of the evening was the election of President in place of Dr. Warwick, resigned, which resulted in the election of Mr. G. S. Pascoe (Council), by a large majority. A lengthy discussion took place with reference to the annual exhibition. The secretary informed the members that he has altered his address to 28, Shacklewell Lane, Kingsland, N.E.

**Herefordshire.**—A special field day was held on the 16th inst., by kind invitation of the President, Alderman Blake. The members left Hereford for Ross in spite of the inclement weather, where Mr. Blake met them with a four-in-hand, and a closed carriage for the cameras, etc. The party drove through Mitcheldean to Speech House, where the President had provided a most sumptuous luncheon.

Mr. Alfred Watkins, Vice-President, thanked Mr. Blake for his extreme kindness, and proposed the health of the President, which was enthusiastically received. Mr. Blake, in replying, remarked that it gave him great pleasure to be present; and to see such a large number around him. Some photographs were taken of "Ye Speech House," and the party proceeded through the Forest of Dean to Staunton, where the Buckstone or Rocking-stone was visited and plates exposed upon it, then on through some charming scenery to Monmouth and Whitechurch to Ross, where tea was provided at the "Royal." The party visited the chief attractions of Ross, and returned to Hereford after experiencing a most pleasant and thoroughly enjoyable day.

**Holborn.**—On the 17th inst. Mr. J. H. Avery in the chair, Mr. A. J. Golding gave a very instructive and able demonstration on "Carbon Printing," using the tissue as sent out by the Autotype Company. This printing process was, in Mr. Golding's opinion, one of the most charming. Mr. Golding gave a number of hints during the demonstration, and developed a few prints to illustrate his remarks. On Saturday, June 18th, outing to Pinner and Ruislip, where a very charming day was spent in spoiling plates.

**North Middlesex.**—On the 13th inst., Mr. Stanley Barnard in the chair, two new members were elected, and one nominated for election. Mr. F. E. Jones gave a demonstration on the "Platinotype Company's New Cold Bath Process." He developed prints from hard and soft negatives, and having purposely obtained air bubbles on the surface of a print, showed that they disappeared before completion of development. The points he emphasised were: That the new process is suitable for use with softer negatives than the hot-bath process, and if a negative gave hard prints it would be advantageous to over-print and develop on a weak bath. No thermometer or special dish is necessary for printing; it would usually be found desirable to print until detail is visible in all but the highest lights. Paper which had been properly stored for some time would give more half-tone than newly-coated paper. The developer is made by dissolving half a pound of developing salts in 48 ounces of water. About fifteen seconds' floating is necessary, or longer if there are heavy blacks in the print, or the shadows may be rusty and granular. The used developers should not be kept in a strong light. Mr. Jones answered a number of questions, and stated that an under-exposed print might in some cases be saved by slightly heating the developer. Messrs. Houghton and Sons exhibited their hand-camera, explaining the action of all the parts. The remainder of the evening was devoted to technical matters arising from questions found in the box. The usual competitions of views taken at recent field days were held, that for Sewardstone showing the largest number of entries. The vote of merit was won by Mr. H. Smith. The next meeting will be held on June 27th, when Mr. F. Tennant will take the chair, and celluloid films will be the subject for discussion. Visitors will be welcome.

**P.S.G.B.**—Ordinary meeting on 14th inst., Captain Abney, C.B. (President), in the chair. Mr. H. A. Lawrance was elected, and six nominations read; three more Societies, Madras, Putney, and Cleveland Camera Club, were announced as having joined the affiliation. Dr. J. J. Aeworth, F.I.C., F.C.S., read a paper on "Orthochromatic Photography," in which he stated that although the eosine dyes were at present mostly used, he thought there were others equally or more suitable for the purpose. For yellow sensitizing erythrosin was most used; for green, uranin, and for orange-red, cyanine or quinoline blue. The assertion in the Taillor and Clayton patent that eosine without ammonia as a vehicle is useless, he characterised as absurd and contrary to fact; the amount of dye mentioned in the specification, viz., 1 gramme in 100 of emulsion, was excessive, and detrimental to the working of the plate. The only real patent of commercial value was Vogel's, the essential feature in which is the formation of silver eoside; and he believed that all orthochromatic plates at the present day were made by this method, which he should describe as chemical sensitizing as opposed to optical sensitizing after the manner of the Taillor patent. To prove that orthochromatic plates are now made according to Prof. Vogel's process, it is only necessary to treat a plate with a solution of potassium bromide, when it is practically deorthochromatised. For scientific purposes he had made plates sensitive to, practically, the whole spectrum, and obtained photographs of the solar spectrum from A in the red to H and beyond, for which purpose he used tincture of jaborandi. Dr. G. Lindsay Johnson asked for information as to the keeping properties of orthochromatic plates. Mr. J. Spiller considered optical and chemical sensitizing as one and the same thing. Erythrosin being a tetraiodofluorescein, when in contact with silver bromide yielded its iodine to form silver iodide. Mr. Debenham said he had used orthochromatic plates which contained an excess of bromide; he fully agreed with Dr. Aeworth that ammonia with erythrosin was not necessary. Mr. Gotz has had Dr. Vogel's azaline in his hands for six years at least. Dr. Aeworth said as far as his experience went orthochromatic plates did not keep so well, as they could not be prepared with an excess of bromide. Collodion was



superior to gelatine because of the free silver it contained. The President said his own practice was to pour the colouring matter on, and then wash out under a tap as much as possible. He made an orthochromatic emulsion some years ago which contained an excess of bromide. The most perfect results were got by using cyanine and erythrosin; as a developer for orthochromatic plates he preferred eikonogen. Mr. E. H. Farmer then read a paper in which he contradicted an alleged statement of Mr. Warnerke before the Society to the effect that there was no photo-technical educational establishment in this country. He gave figures to show that in numbers the Polytechnic School in Regent Street was larger than any Continental one, and claimed that it would compare favourably with any. Mr. Bird pointed out that the statement did not appear in the Society's official report; he was sure there was no intention to do harm. Mr. Clifton said Mr. Warnerke was speaking of photo-mechanical processes; there was no school in this country, he had to go abroad to get men who understood the work. The President said the Society was sorry if it had appeared to slight the Polytechnic; nobody knew more than he did of the amount of instruction given there. He asked the Society to show by applause that there was no intention to slight that institution.

**Rotherham.**—Mr. E. I. Hubbard, M.S.A., presided over the monthly meeting held on the 14th inst. Two new members were

elected. The principal business was the consideration of a paper on "Stereoscopic Photography" read by Mr. Leadbeater. He argued that stereo prints possessed a charm not to be obtained by any other means of picture-making. He had recently renewed his acquaintance with this branch, and had obtained most satisfactory results, many of which he exhibited. On the 17th inst. the members had an enjoyable excursion to Haddon Hall, Derbyshire. The first outing of the season was to Conisborough and Sprotborough on Saturday May 28th. Beautifully fine weather prevailed on both occasions.

### SOCIETIES' FIXTURES.

- June 24.—**RICHMOND CAMERA CLUB.**—Show of Prints.  
 „ 25.—**W. LONDON.**—Weybridge (Cycling Division).  
 „ 25.—**STOCKPORT.**—Ramble to Gawsworth.  
 „ 25.—**PAISLEY.**—Excursion to Cadzow (Hamilton).  
 „ 25.—**OLDHAM PHOTOGRAPHIC SOCIETY.**—Outing to Skipton for Bolton Abbey.  
 „ 25.—**BRIGHTON AND SUSSEX.**—Excursion to Alfriston.  
 „ 25.—**CROYDON.**—Excursion to Marden Park, Halliolo Valley, and Chelsham.  
 „ 25.—**ASHTON-UNDER-LYNE.**—Ramble to Hayfield for Kinder.  
 „ 25.—**ACCRINGTON.**—Excursion to Mytton.

## To Correspondents.

All communications for these columns are to be addressed to **The Editor, "Amateur Photographer," 1, Creed Lane, Ludgate Hill, London, E.C.**

### QUERIES.

5728. **Chloroplatinite of Potash.**—Will some reader kindly say where this can be obtained, and in small quantities? Is it kept best in solution? I was thinking of making up a toning bath as follows:—  
 Chloroplatinite of potash .. .. 4 gr.  
 Nitric acid .. .. 2 minims  
 Water .. .. 2 oz.

Can such a bath be used from time to time, or is it necessary to make a new one for each batch of prints?—G. B.

5729. **Pinholes.**—I exposed some plates and did not develop for some days, and when developed they were "full" of pinholes. Was it on account of not developing at once, as it never happened with me before? I used Ilford Special Rapid, and new formulae.—G. B. C.

5730. **Changing Bag.**—Would any of your readers kindly say where I can purchase a good changing bag, also the price of it?—WILLIE.

5731. **Exposure.**—If I give an exposure of 1 sec. with an Ilford ordinary, with stop f/10 in England, what ought I to give with same stop and plate in Germany?—E. ILLINGWORTH.

5732. **Photography on Wood.**—Having just obtained a situation where a knowledge of the different methods of photography on wood would be of immense assistance and advantage to me, I should be very glad if any of your readers could tell me of any handbooks on the subject.—NEWS.

5733. **Zinco-Engraving.**—Can any of your readers tell me of a handbook of this (I mean the ordinary line) process?—NEWS.

5734. **Hydro cum Elko.**—Can any amateur tell me if eikonogen mixed with hydroquinone would make a good developer, or would it do better alone in place of hydroquinone, and what amount should be used?—IGNORANCE.

5735. **Chester.**—Will any reader oblige me with the loan of a few half-plate negatives of Chester, for bazaar work? I will pay all expenses. Address with Editor.—WINTER.

### QUERIES UNANSWERED.

June 3.—Nos. 5769, 5714.

„ 10.—Nos. 5716.

„ 17.—Nos. 5719, 5720, 5721, 5722, 5734, 4726, 5727.

### ANSWERS.

5598. **Intensifying.**—

Ferricyanide of potash .. .. 10 gr.  
 Uranium nitrate .. .. 10 „  
 Water .. .. 5 oz.

Keep the salts in 10 per cent. solution and only make up as required. The negative must be washed quite free from hypo, and immersed in the solution until it has attained a decided red colour. It is a useful method, but opinions may vary as to which is the best.—THE SMITH.

5662. **Isle of Wight.**—See list of "Holiday Resort" articles, p. 408.—O. L. M.

5683. **Photogravure,** although one of the finest processes, is beset with many difficulties, and is hardly suitable for an amateur. A book with the above title, by W. T. Wilkinson, is published by Iliffe and Sons, at 1s. 6d., and would be useful to you.—THE SMITH.

5688. **Photogravure.**—This is not a process for an impecunious amateur, as the initial outlay is not small.—O. L. M.

5684. **Grange.**—See AMATEUR PHOTOGRAPHER, Aug. 7th, 1891.—O. L. M.

5685. **C. de V.**—Cannot be done unless you have the original negative, or make one from the c. de v.—THE SMITH.

5690. **Studio.**—H. P. Robinson's "The Studio, and what to do in it," would give you the information.—THE SMITH.

5690. **Studio.**—Robinson's book, "The Studio, and what to do in it," is the best work on this subject, and Davenport, of Parkhouse Street, Camberwell, would supply one ready made, and cheap.—O. L. M.

5694. **Ilford P.O.P.**—You can hardly expect to get "jet black" tones on a gelatino-chloride paper. The nearest approach will be to print deeply from a vigorous negative, and use Blanchard's platinum toning formula. If black tones are particularly wanted, use bromide paper or platinotype.—THE SMITH.

5694. **Ilford P.O.P.**—Very vigorous negatives, deep printing, and platinum toning are necessary for black tones.—O. L. M.

5695. **C. de V.**—To enlarge from this without a negative is impossible.—O. L. M.

5696. **Stop.**—A large stop should be used in portraiture and instantaneous work, and as large a stop as possible in landscape work, one that will just bring the foreground and principal object into focus. A small stop may be used for architecture, copying, and when the camera is tilted or rising-front used.—O. L. M.

5696. **Stop.**—The largest stop that will give sufficient definition is the one to use. If both near and distant objects are being photographed together it is generally necessary to use a small stop to get sufficient depth of focus.—THE SMITH.

5697. **Toning Bath.**—The toning bath which keeps best in my hands is the chloride of lime bath:—

Chloride of gold .. .. 15 gr.  
 Common chalk .. .. 150 „  
 Chloride of lime .. .. 24 „  
 Lime water .. .. 15 oz.

Add 1 oz. of above to 10 oz. of water for every sheet of paper to be toned.—OSIRIS.

5698. **Intensifying.**—The usual formula is—

Uranium nitrate .. .. 10 gr.  
 Ferricyanide of potash .. .. 10 „  
 Distilled water .. .. 4 oz.  
 Glacial acetic acid .. .. 30 drops

No particular intensifier can be stated to be the best, as this ought to be selected so as to suit the result desired.—OSIRIS.

5701. **Hardcastle's Platinum Paper.**—Absolutely fresh paper is essential, and it must have absorbed some little moisture before printing. A bright diffused light is best, with a fairly plucky negative.—OSIRIS.

5703. **Snap-Shot Developer.**—

1.  
 Eikonogen .. .. 120 gr.  
 Hydroquinone .. .. 120 „  
 Bromide potash .. .. 30 „  
 Sulphite soda .. .. 2 oz.  
 Water .. .. 20 „  
 2.  
 Caustic soda .. .. 120 gr.  
 Water .. .. 20 oz.

Use equal quantities of each.—THE SMITH.

5703. **Snap-Shot Developer.**—There is nothing to beat plain pyro and ammonia—at least, so I think. I always use Edwards' glycerine formula, and get good results.—OSIRIS.

5706. **Printing.**—It is difficult to answer this on such meagre data. Why not send a print, some paper, and details of working to the Editor, and ask his advice?—OSIRIS.

5707. **Exposure.**—About five minutes for larger sizes, and less for same size.—J. K.

5710. **Norwich.**—The cathedral, the castle, the market-place, and many of the old churches are worth doing. If you find your way to the river Yare, you can get any amount of instantaneous views, and Pull's Ferry makes a pretty picture. Towards Thorpe, Whittingham, etc., there are plenty of pretty river bits, and Norwich is a good centre for the Broads.—O. L. M.

5711. **Speed of Shutter.**—Highest, 1-70th; lowest, 1-8th; but varies slightly.—O. L. M.

5715. **Snap-Shots.**—Paget xxxxx, the Mawson, and Verel's 60-times are the best, and use pyro and ammonia, following Mr. Hodges' suggestions in last week's issue, p. 467.—O. L. M.

5728. **Instantaneous Work.**—You will not find your task an easy one. Use your lens at full aperture, certainly, and the plates you mention, as good as any for the purpose. The difficulty will be to get a shutter fast enough—in fact, a high-speed focal-plane shutter is the only one that will give you a ghost of a chance, and as you will want an exposure of not more than 1-250th sec., the odds are that you will have but the ghost of a picture, unless circumstances are very favourable. Even with that brief exposure you will find that at least one of the horse's feet, as well as the upper part of the wheel, has moved over 3 in.—THE SMITH.

5725. **Touring.**—There is not nearly so much difference between exposures in Switzerland and England as one would suppose, and the great mistake generally made is to under-expose. Of course, short exposures are necessary for snow pictures brilliantly lighted. Take films if possible. Fitch's rapid for hand-camera, and slow for stand work are good. Pack your kit where you like, for there is very little to fear from custom house officials. I have just returned from a trip, carrying two cameras, besides other baggage, over the English, French, and Swiss frontiers without undoing a buckle in a custom-house. Most English supplies are to be obtained in the principal towns, but if films are carried, any number can be taken, for they weigh next to nothing. There is no chance of being "run in" for photographing in this most delightful country. I shall be glad to give any further information if required.—BERNARD LINTOTT.

## EDITORIAL.

G. H. KITSON.—We have written for some Amidol, and shall report as soon as we can get some. Of the instruments named, we prefer A.

W. TANSLEY.—The omission was accidental, and has been put right this week.

RODWELL GEORGE.—You are not carrying development far enough—the printing was not deep enough, and the prints are over-toned.

C. F. H. HALLETT.—We are in receipt of your letter, and the only answer we can give you is this, that one man can drink a bottle of brandy with impunity, whereas another man would be nearly killed by the same. For you to judge your print by one of the others is perfectly ridiculous.

R. F. BRICKDALE.—You can get the frames from



Adams and Co., Fallowfield, or Mawson and Swan. We presume you mean frames for hanging the transparencies up.

**MOSSSEL** (Cape Colony).—If you intend to really do portraiture it certainly would be advisable to obtain a portrait lens, although, of course, for merely occasional work we should recommend you to use the lens you have. We shall always be glad to help you or your friends in any way we can. Our publishers will see to your getting the paper.

**W. M. G.**—We shall hope to return plates this week. Why could you not use pyro and soda? We will develop your plates, and write you.

**J. W. E.**—Nine inches is a very good focus for half-plate work. The shortest exposure is about 1-90th sec.—the longest, any time you like from 1 sec. to 1 hour.

**NEWS.**—Wilkinson's "Photo-engraving, Collotype, etc.," price 6s., is the best book. We publish this week a note on wood engraving, and one appeared in our issue for April 8, p. 291. We insert queries, however.

**H. SEEL.**—(1) About 1-3rd faster. (2) C3 or D3 most certainly. (3) Pack the plates by themselves and label, "Maa ikke udsættes for dagslyset. Og kun aabnes i adressatens nærværelse."

**BERNARD LINTOTT.**—You can take the prize for your own sake; never mind about other people. We will send it on to you.

**KENNETH.**—We have not yet tried Amidol; we have written for some of it, but have not been able to get it over yet. It is, we believe, more like hydroquinone than pyro. We hope to have a leader in next week's issue on this subject. The print is up to competition standard technically, but is weak artistically.

**H. W. KEMP.**—We print a paper next week which will probably help you. Your fault is in not saturating the bath with chloride of silver first—fill it with scraps of paper, and leave for twelve hours.

**MIDDLETON EDWARDS.**—The shutter used by Mr. Hodges is a Tylar blind shutter. Please call for particulars of competition.

**ALEC BORELEY.**—We are very sorry, but mistakes will happen sometimes.

**E. C. LUGARD.**—The competition all tends towards the centre of picture, and the print is wanting in brilliancy and vigour. We should say it would go into Class 3 in competition.

**R. WHITING.**—Many thanks for paper, which will appear in due course. Would you like to have some free copies?

**BERTRAND Y. BEVAN.**—(1) You might try Stocks, of Rye's, new lamp, this entirely avoids smoke and smell and gives a splendid light. (2) Gas may be used, and the Incandescent Gas Light Company's burner, price 10s., is the best, but you obviously have not enough ventilation and draught. (3) The underlined information is quite correct.

**B.**—You cannot restore the paper, and looks as though some chemical like dry pyro had got on it. Write to the makers.

**BOTANY BAY.**—(1) The best way is to purchase Perken, Son and Rayment's special table top tripod head, which can be turned on its side, and thus enables the operator to sit underneath his camera and focus. Or you can rack your lens out to the required distance, if you know the height of the room and use a small stop. (2) The ferro-prussiate paper certainly might cause iron stains if the negative was damp. (3) The Photo-omnibus takes quarter-plates. (4) Raise your camera front, tilt the camera, and then put your focussing glass vertical; if not, if all the sub-ject is not included, you must get further back.

**MISS L. RIDLEY.**—The best plan is to get a lens the size larger; for instance, a whole-plate lens for half-plates, and either a Taylor, Wray, or Optimus. Using a larger lens means that of course only the centre of the field is utilised, hence it will not require stopping down so much.

**C. J. EVANS.**—(1) Too much foreground, but good technically. (2) Good. (3) Not sharp enough at the top, and overtoned. (4) Ditto, hot water means 212 deg. F., cold water, 58 deg. F. John Franks, 8, Bridge Street, and J. B. Brookes, 15, Flowergate, have dark-rooms and sell plates, etc. There is no club there. Always pleased to help you.

**PRINTS.**—Considering they are your first attempts they are very creditable. (1 and 2) These are of course spoilt by the movement of the figures. (3) The camera was not straight, and it is not in sharp focus, not any of the prints are sufficiently toned, in fact 2 and 3 are not toned at all.

**SUBSCRIBER.**—(1) Negative over-exposed, print flat and poor. (2) Snow too white, and the figures should not have been just at the foot of the tree. (3) Print rather flat, and too much foreground. (4) Would have stood deeper printing. (5) Over-printed, and wants some figure in the left-hand corner to break it up. (6) This print shows some curious markings, and the man is too much in the centre of the print, and should have been nearer the right-hand corner. (7) Ditto. (8) Utterly spoilt by halation. (9) Bridges are proverbially difficult to treat, and this is no exception to the rule, and the figure is not wanted.

**W. NORTHWOOD.**—The cat and group would be admissible, not the horses. Both the group and horses are very good work. Why do you not try some other printing process, the new Platinotype, for instance?

**BOTANY BAY.**—We should prefer No. 1.

**A. M. W.**—You did not carry toning far enough; as a rule with the borax bath it has to be carried till the print looks decidedly slaty blue.

**EIKENSOEEN.**—(1) Both plates are of the same rapidity; we should prefer the xxx. (2) The films are quite as good and as easily worked. The isochromatic certainly have the advantage. (3) If not exposed to damp, or chemical or gas fumes, the bromide paper should keep at least two or three years, with care it has been kept over five. (4) No; obtain some of the chemically pure blotting sold by most photographic dealers.

**BLANCHE.**—We could do nothing with your plate, but will send you down a print on the paper from one of our negatives. An aqueous solution of shellac in borax is recommended for varnishing films.

## Sale and Exchange.

### RULES.

**CHARGE.**—Twelve words or less for Fourpence.

Every additional three words, one penny. The name and address of the sender must be paid for. (A single figure, or group of figures undivided by letter, space, stop, or words, counts as one word; compound words count as two words.)

**DEPOSITS.**—The money for goods forwarded on approval may be deposited with the Publishers of the AMATEUR PHOTOGRAPHER, who will hold the amounts deposited until they are satisfied that the transaction has been completed to the satisfaction of buyer and seller.

**ADDRESS.**—All advertisements (which can be received up to Wednesday morning, 9 a.m. and other communications having reference to the Sale and Exchange column, must be addressed "Sale and Exchange, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C."

**CARRIAGE** must be paid on all apparatus sent for report, and they will be returned carriage forward.

**COMMISSION.**—A charge of 2½ per cent. will be deducted from all deposits whether a sale is effected or not. Minimum charge 1s.

**PAYMENT.**—All payments are to be by cheques or Postal Orders, made payable to Hazell, Watson, and Viney, Ltd., 1, Creed Lane, London, E.C.

**ADVERTISEMENTS** can be inserted under a number, the name and address being registered, and letters forwarded for a fee of 3d. to cover postage.

**PAYMENTS** should be made in Postal Orders or Postage Stamps.

**REPORTING.**—Apparatus may be sent to the EDITOR, AMATEUR PHOTOGRAPHER, 1, Creed Lane, London, E.C., who will report upon the apparatus to the buyer for a minimum fee of 2s. 6d., or a commission of 2½ per cent., upon the sale price of the apparatus.

**Bicycles, Tricycles, etc.**—Exchange Safety bicycle, double hollow rim, solid tyre, balls all over. Swift pattern, cost £15, been very little used, and all accessories for 15 by 12 camera, lens, etc., or cash, £9; approval. Pollard, 7, Madeira Terrace, South Shields.

Exchange Safety bicycle, ball bearings throughout, splendid condition; wanted, good photographic set, half-plate or quarter-plate. P. G. H., 23, Bonfield Road, Lewisham.

Cushion-tyre Safety bicycle for disposal, perfect condition, been very little used, good as new, ball bearings throughout including pedals, nickel-plated, good make; of immediate buyer would accept £6 10s. cash; must sell; cash wanted; satisfaction certain; approval willingly.—T., 6, Tower Street, Ipswich.

**Cameras, etc.**—Camera, half-plate International, by Lancaster, good condition, instantaneous shutter, necessary dishes, £4.—Apply, N. Lyall, The Cottage, Hillside, Montrose, Scotland.

Whole-plate camera, long extension, reversible back, all movements, brass-bound, three double backs, never used, a bargain, £5 5s.—Simmonds, 5, Park Road, Crouch End, N.

Quarter-plate camera with accessories, suit a beginner, only 12s. 6d.—Parker, 1, Mornington Terrace, Wanstead, Essex.

**Cameras, Lenses, etc.**—Meagher's 9 by 7 portable camera, short extension, one single and two double backs in leather case, and Ross' doublet lens, £7 10s.—E. Owen, Broad Street, Newtown.

Rouch's patent 12 by 10 camera, double slide, Ross' 12 by 10 rapid orthographic lens; wanted, first-class light whole-plate camera.—11, Waterloo Crescent, Dover.

Watson's quarter-plate hand and stand camera, three double backs, R.R. lens, adjustable focus, two finders, cheap, £5, or exchange to same value.—Monk, 26, Newgate Street, London.

For sale, a half plate 1889 Instantograph camera, rapid lens with adjustable diaphragm and patent shutter, and two dark slides, price £2 15s. May be seen on application to H. P., 67, Downe Road, Clapton.

First-class half-plate camera, six double backs, £5 10s.; Optimus rapid Euryscope lens, £4. Seen any time by appointment.—F. Holmes, French Embassy, Albert Gate, London.

**Enlarging Apparatus.**—Hume's Cantilever enlarging lantern for sale, 8½ in. condenser, and first-class lens, very suitable for amateur, cost £11 15s., will sell for £8.—Sharples, 4, Limbrick, Blackburn.

**Exposure Meter.**—Watkins' exposure meter, as new. Offers?—F. Thornton, 15, Bromley Road Beckenham.

**Hand-Cameras, etc.**—Stirn's American hand-camera for 25 quarter-plate exposures, works Eastman's films, 30s.; also Griffiths' Guinea, with three slides, 14s.; both in good condition. Offers?—Ward, Surveyor, Castle Street, Northwich.

Hand-camera, quarter Luzo, loaded with spool of Eastman's transparent films (48) including leather case, nearly new, cheap, £3; no exchange.—J. A. E., 12, Evelyn Gardens, London, S.W.

Hand-camera, cost 26s., sell or exchange for half-plate burnisher.—Saich, Rose Lane, Waterford.

No. 2 Demon camera, cost 12s. 6d., good as new. What offers?—A. Wilson, Jubilee Buildings, Altrincham.

Rouch's Eureka quarter-plate, good condition. Full particulars from No. 306, office of this paper, 1, Creed Lane, E.C.

Key hand-camera, new, complete with R.R. lens, instantaneous shutter, six double backs, view finder, and clip for tripod, cost £8 5s., price £5.—No. 305, office of this paper, 1, Creed Lane, E.C.

Stereoscopic Company's Dispatch hand-camera, six double backs, Newman's shutter, equal new, cost £12 15s., price £7.—B., 13, Canterbury Road, Brixton, S.W.

For sale, Loman quarter-plate Reflex hand-camera, six double backs, special solid leather case to take camera and double backs, and folding tripod stand, complete, cost £15 18s. 6d. a few months ago and has hardly ever been used, price £10, or any reasonable offer.—No. 307, office of this paper, 1, Creed Lane, E.C.

Quarter-plate hand-camera, fixed focus rapid rectilinear, f/10, adjustable shutter, finder, four metal slides, etc., 25s.—No. 308, office of this paper, 1, Creed Lane, E.C.

**Lenses, etc.**—London Stereoscopic Company's quarter-plate Euryscope, full aperture, f/6, Waterhouse diaphragms, excellent condition, cost 3 guineas. What offers?—Ampho, office of this paper, 1, Creed Lane, E.C.

To be sold cheap, 7 by 5 Optimus R.R. perfectly new, splendid instrument.—J. M. O'Dwyer, Golden, Cashel.

Ross' No. 7, 9 in focus, portable symmetrical lens, iris, a splendid instrument, new, £5.—E. Owen, Broad Street, Newtown.

Whole-plate rectilinear, 11 in. focus, iris diaphragms, f/8 to f/64, movable hood, splendid lens, new, 25s.—L., 8, Kenilworth Road, Willesden Lane, London, N.W.

**Sets.**—Whole-plate camera, double extension, reversing back, back racks forward for wide-angle, three double slides, Ross' rapid symmetrical lens, Newman's shutter, three-fold tripod, equal to new and perfect, cost £18, accept £13.—No. 304, office of this paper, 1, Creed Lane, E.C.

Quarter-plate outfit, complete, by Watson, including best leather case, two lenses, and stand, as new, £5, bargain.—Walker, Scotchholme, Nottingham.

On sale, half-plate camera, all movements, excellent lens, tripod, case, changing bag, and three double backs, as new, cost £6 17s. 6d., take £4.—H. Taylor, 103, Embden Street, Greenhays, Manchester.

Turnbull's 5 by 4 detective camera, covered with black leather, with good R.R. lens, six double backs, focussing arrangement, two view finders, time or instantaneous shutter, waterproof canvas case, can be used in hand or on stand, perfect condition, price £3 10s.; cost more than double.—Tytler, 11, Chester Street, Edinburgh.

Lancaster's 1888 Instantograph, two double dark slides, lens, shutter, stand, complete in case. Also Phantasmagoria magic lantern by Carpenter, £2 10s.; and Westley, with eleven slides, comprising animal studies, moving slides, views, etc., £5 the lot, or £2 10s. each.—F. Fyler, 53, Wimpole Street, W.

Optimus camera, half-plate, brass-bound, Optimus R.R. lens and plunge shutter, three double backs, leather case, tripod, view finder, focussing glass, all in perfect condition, cost £15, take £10.—Clarke, Chemist, Ramsey, I.O.M.

Modern half-plate camera, double back, and tripod, 30s.; half-plate portrait lens, 20s.; 9 ft. sheet with elevator, 10s.; musical box, new, three bells, 60s., or exchange.—66, Brown Lodge, Smithy Bridge, Manchester.

Gotz' whole-plate camera, four double backs, tripod, aluminium head, very light, practically new, £9 9s.; deposit.—B., 5, Palace Court Mansions, Bayswater.

Underwood's half-plate set, nearly new, rapid lens, with rack adjustment, sliding front, reversing back, two double dark slides, focussing glass, rebounding shutter, tripod, quarter carrier, £2 15s.; approval; deposit; bargain.—F. Bailey, St. John's Lane, Canterbury.

Lancaster's half Instantograph, three metal slides,



ens, shutter, and stand, splendid condition, 75s.; approval, deposit, with pleasure, or apply, John Thomas, 1, Gringos Terrace, Port Talbot.

For sale, Lancaster's Instantograph quarter camera, lens, dark slide, shutter, tripod, change box, dark-room, lamp, developing dishes, printing frames, and canvas case to carry camera, all as new, a bargain, £22, or nearest offer.—T. Hewitt, Vardre Cottage, Court Street, Llandudno.

Half-plate Lancaster's 1892 Instantograph camera, slide, tripod, and R.L. lens, bargain, 67s. 6d.; approval.—14, George Street, Stroud, Glos.

Half-plate Lancaster's Instanto, with one dark slide, three dishes, tripod, shutter, cloth, cheap, nearly new.—Parker, 1, Mornington Terrace, Wansford, Essex.

**Shutter.**—L'Automatique shutter, half-plate, good condition, cost £1, price 10s.—Male, Union Street, Lytle.

**Sundries.**—Lancaster's solid leather case for half-plate camera, slides, etc., nearly as good as new, cost 25s., price 14s.—Rev. J. Chapple, Lincoln.

I will exchange Ross' best £10 deer-stalking telescope for Dallmeyer 10 by 8 rapid rectilinear.—Apply, A. L. Birch Lodge, Lyndhurst.

Several photographic sundries for sale, many nearly new, cheap, list free.—H. M. Campbell, Hackbridge Road, Warrington, Surrey.

Whole-plate rollholder, well made, hardly used. Offers? Quarter rapid rectilinear, iris. Offers? King's hand-camera. Offers? Good condition. Drayton folding dark lantern. 3s.—Apply, Holloway, 15, Friar Road, Bermondsey.

AMATEUR PHOTOGRAPHER, Nos. 65 to 228, six volumes, new, unbound; exchange for quarter-plate hand-camera, or useful sundries.—Bateson, 5, Grantham Place, Bradford.

Will exchange for good half-plate camera and lens Lancaster's Instantograph preferred, model engine, 1 in. bore, 2 in. stroke, all brass, copper boiler, with fire bars, safety valve, manhole, starting lever, etc., or sell £3, or offers? Particulars sent.—J. Davies, Fellingham, Lincolnshire.

AMATEUR PHOTOGRAPHER, 320 numbers, 1885-'92, good condition, 10s.—F. C. A., Willersley, Cromford, Derby.

## WANTED.

**Cameras, etc.**—Half-plate camera only, for touring; exchange 10 by 8 camera, with Tylar's double dark slides.—Mathias, Priory Street, Cardigan.

**Show Cases.**—Wanted, photographers' show cases with doors, any size, for outdoor use.—Walker, Grove Cottage, Heckmondwike.

**Shutter.**—Wanted, Thornton-Pickard shutter for Optimus lens, 1½ in. hood; also two Optimus half-plate slides.—H. McCarrick, Enniscrone, Ballina.

**Bargains in Cameras and Sets.**—Whole-plate Optimus Rayment set by Perken, Son, and Rayment, all the latest improvements, best leather bellows, double extension, reversing back, etc., fitted Optimus rapid rectilinear lens, by Optimus, one double slide Eastman's Roll Holder, folding stand, two cases, fitted Optimus Plunge shutter as new, set cost £18 18s., take £10 17s. 6d., lowest; whole-plate camera by Morley, Islington, leather bellows, Spanish mahogany, rising and cross fronts, reversing, three double and one single slides, rapid rectilinear, Waterhouse stops, folding stand and case, take £1 17s. 6d.; half-plate Spanish mahogany camera by Mallett, latest pattern, all movements and improvements, reversing back, double extension, leather bellows, back extension, finest rapid rectilinear lens, three double slides, three-fold stand and case, lowest, £6 6s., a rare bargain; Stereoscopic Company's half

camera, finest mahogany, leather bellows, reversing, three double slides, Stereoscopic Company's rapid rectilinear lens, Waterhouse stops and folding stand, £4 15s., as new; Optimus half-plate camera, guaranteed as new, all improvements, three double dark slides, rapid rectilinear lens for views or portraits, and folding stand, £5 17s. 6d.; half-plate Underwood's Instanto, warranted as new, reversing back, double slide, rapid rectilinear lens, and folding stand, 75s., worth £5; half-plate Instantograph, leather bellows, double extension, loose base-board Instantograph lens, two double slides and folding stand, best condition, take £2 17s. 6d.; Lancaster's stereoscopic camera, finest leather bellows, size 7½ by 4½, with extra bellows, two double slides, fitted silver ring rectigraph lenses, patent See-Saw shutter and folding stand, take £6 6s., quite new; Lancaster's stereoscopic Instantograph, as new, two double slides, 6½ by 3¼ Instantograph lenses, instantaneous shutter and folding stand, take £3 17s. 6d., quarter-plate Le Meritour set complete, camera, lens, slide and stand, 21s.; quarter-plate International complete, best order, camera, lens, two slides, lens shutter and stand, take 37s. 6d., lowest. On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**Photographic Appliances.**—Accessories and apparatus by all the following makers are always in stock; call and inspect any article you may wish to purchase, and compare with different makers' goods, and you will be able to possess the best and most suitable article for your purpose. Special large selections of Lancaster's goods, all Optimus cameras or lenses, Underwood's cameras, Fallowfield's Hand cameras, Talmer Hand cameras, Ideal Hand cameras, etc. All makers' plates, Ilford plates and papers, Paget plates, Thomas's plates, Fry's plates, Mawson's plates, silver papers, bags, cases, valises, 2-fold, 3-fold, and 4-fold stands, dishes, printing frames, etc., etc. Write for list to Manager, City Sale and Exchange, 54, Lime Street, corner of Leadenhall Street, City (late Goy's Medium).

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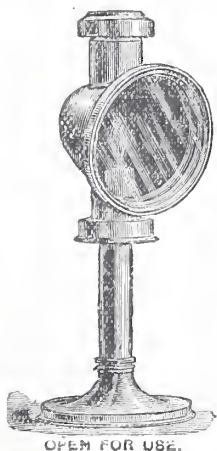
**Bargains in Lenses.**—For sale, 15 by 12 Optimus wide-angle symmetrical, rotating stops, 10 in. focus, as new, take £4 15s., cost £9, cheap; 10 by 8 Optimus rapid rectilinear, Waterhouse stops movable, fine definition, covers well, £3 17s. 6d.; whole-plate rapid landscape lens by Tench (this is really same as Dallmeyer No. 3), rotating stops, grand definition, works 1/16, will cover 10 by 8, quite new, take 60s., cost more than double; whole-plate True-view lens by Charterhouse Stores, iris stops, movable hood, quite new, take 65s.; 8 by 5 Ross' actinic doublet, rotating stops, 6 in. focus, quite new, latest pattern, take 60s.; Dallmeyer No. 3 D patent portrait lens, 8½ by 6½, view 10 by 8, focus 10½ rack focussing, grand article, cost £9 10s., take £6 10s.; Suter No. 3, landscape rotating stops, about 12 in. focus, quite new, 37s. 6d., lowest; half-plate rapid rectilinear, fine definition, by Carey, Holborn, fitted iris stops, as new, £1 5s.; cabinet portrait lens, quite new, rack focussing, Waterhouse stops, take 25s., cost 60s.; Hockin's desideratum rapid rectilinear, covers 7 by 5, iris stops, movable hood, grand article, quite new, take 37s. 6d.; half-plate

Lancaster's Instantograph lens, iris stops and instantaneous shutter, as new, 15s.; quarter-plate Ross' landscape lens, as new, a little beauty for all-round work, £1 7s. 6d.; quarter-plate portrait lens, rack focussing, a really good article, take 10s. 6d.; quarter-plate Optimus rapid rectilinear by Perken, Son, and Rayment, Waterhouse stops, covers 5 by 4, focus 5½ in., quite new, take 27s. lowest. All above lenses are warranted as described.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

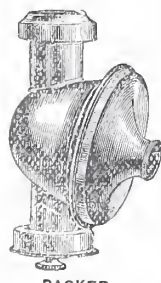
**Bargains in Hand Cameras.**—Adams' Ideal, covered leather, new few weeks since, very latest pattern, rapid rectilinear lens, carries twelve quarter-plates, two finders, etc., £5 17s. 6d.; Griffiths 4-plate magazine hand-camera, carries twelve plates, changing bag, good lens, finder, etc., 22s. 6d.; Sammel's patent stereoscopic hand-camera, rapid rectilinear lenses, changing bag, instantaneous shutter, for either quarters, cabinets, or stereoscopic, as new, 57s. 6d.; Samuel's quarter-plate hand-camera for twelve plates, quite new, rapid rectilinear lens, two finders, 32s. 6d.; Talmer Hand-camera, as new, fine lens, time and instantaneous shutter, two large finders, carries 12 plates, take £2 17s. 6d.; Optimus Magazine hand-camera, carries twenty-three quarter-plates; Optimus Euryscope lens, two finders, best condition, take £5 15s.; London Stereoscopic Company's despatch detective, covered black leather, fitted Stereoscopic Company's rapid rectilinear lens, Newman's shutter, two finders, three double slides, rack focussing, size quarter-plate, as new, take £6 6s., cost £10 10s.; King's hand-camera, thorough order, carries 12 4-plates, fine lens, two finders, take 25s. lowest; Griffiths' hand-camera, quarter-plate, three double slides, finder, good lens and shutter, take 17s., quite new; Ariel hand-camera, Shew's eclipse pattern, leather bellows, quarter-plate, rapid rectilinear lens, rotating stops, Kershaw shutter, three patent Turnbull slides, quite new, take 68s. All above warranted in very finest order.—On view, City Sale and Exchange Rooms, 54, Lime Street, corner Leadenhall Street, City (late Goy's Medium).

**WANTED,** a Junior Clerk, with knowledge of shorthand, bookkeeping, and photography. Apply in own handwriting, giving full particulars, to the Editor, AMATEUR PHOTOGRAPHER.

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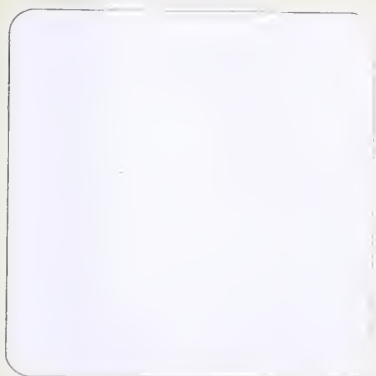












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